ARCHITECTURE

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BUILDING TRADES' NUMBER.

THE architects controlling ARCHITECTURE do not permit "write-ups." Realizing that the advertisers can impart much valuable information to the profession, they devote the reading matter of this issue to the advertisers' interests—the large photographic plates appearing as usual.

CLEVELAND ARCHITECTURAL CLUB EXHIBITION.

HERBERT B. BRIGGS.

THE fourth exhibition of the Cleveland Club was most auspiciously opened, in the auditorium of the Chamber of Commerce, Monday evening, June 17th, by a representative gathering of Cleveland's art-loving citizens which filled the spacious and beautiful hall to its capacity.

Sketch models of the Pan-American Exposition statuary, the electric tower forming the central feature, were successfully grouped upon the rostrum opposite the entrance with exquisite effect, giving a splendid first impression. Flanking this group on either side and extending around the hall, alcoves formed of screens about ten feet high gave hanging space to the exhibits and drawings of the Architectural League circuit, the local club, the Cleveland School of Art, the local Water Color Society, the Pan-American sketches, the Baltimore Custom House competition, the Massachusetts Institute of Technology, the University of Pennsylvania, Cincinnati Chapter A. I. A., Toronto Architects Eighteen Club, T Square Club, University of Illinois, Washington Architectural Club, Columbia University, Cornell College of Architecture and the Cleveland Post Office, Custom House and Court House competition.

In number of exhibits shown the exhibition did not compare with previous ones, but it surpassed all others in quality.

The school exhibits were unusually interesting and instructive, particularly so when considered comparatively with those of five or six years past. Studying the work of twenty-five years ago in contrast with that of to-day gives to him who reads the signs of the times an insight into the great influence upon American architecture that is beginning to be exerted by the European and American schools. Let that influence continue to grow in strength and power, educating not only draughtsmen and architects, but through them the masses, to a keener appreciation of the best in design and construction. Deserving of particular mention were a design for a Pan-American Exposition which won first mention for Mr. Geo. A. Licht in the "Society of Beaux Arts Architects" competition, and a charcoal rendering of the Temple of Castor and Pollux, Girgenti, by Mr. S. S. Temple.

The catalogue under the newly elected president of the club, Mr. Geo. W. Andrews, deserves commendable mention. The cover design, a conventionalized view of Euclid avenue, taken from Erie street, looking toward the Square, by W. A. Bohnard, is unique.

F. S. Barnum & Company showed a cleverly rendered English-Gothic design for Emmanuel Church, Cleveland, a perspective of "The Market" for the Chautauqua Assembly at Lake Chautauqua, New York, and a drawing for extensive additions and alterations to the Euclid Avenue Congregatignal Church, Meade & Garfield's Euclid Club House, and a design for a house for Mr. H. S. Pickands, with a large water color of a business block, were greatly admired.

In interior decoration and design the sketches and photographs of executed work which attracted much attention and favorable comment were the interiors of the Columbia Club, Indianapolis, and the Seelbach Hotel, Louisville, by William F. Behrens, the drawing room, parlor and billiard-room interiors by M. James Bowman, the interiors of a Cincinnati house by Rohrheimer & Hays, and the Baltimore Court House mural decorations, and the designs for the mosaic work in the Philadelphia mint by Herman Schladermundt.



DINING ROOM IN CINCINNATI RESIDENCE. Rohrheimer & Hays, Architects.

Cleveland's three Ecole des Beaux Arts men, Messrs. Frederick Wm. Streibinger, J. Milton Dyer, and R. Germain Hubby, exhibited many carefully designed and executed specimens of their school work.

The many admirers of Wilson Eyre, Jr., once more enjoyed his well-known sketches.

Ihna T. Frary's pen sketches of a Renaissance Capital and a book cover design were executed in his usual sketchy, yet painstaking and careful style. And, speaking of pen work, the sketches of Walter M. Campbell, M. Heister, Victor E. Rondel and Gustavus A. Trost deserve more than passing mention.

The plaster models and reliefs by Stephen C. Gladwin, especially his "Decorative panel," were admired for decisive yet artistic treatment.

Chas. W. Hopkinson exhibited a large number of photographs of executed work.

A pretentious exhibit was made by Hubbell & Benes, consisting of drawings and scale and full-size models of the new Citizens' Building being erected on Euclid avenue. The one-half inch scale model, executed by Garet, of Washington, of the entrances to the building, is an exquisitely designed and modeled piece of work.

A marquise for a Philadelphia residence, by Kennedy and Kelsey, attracted well deserved attention.

R. C. Spencer, Jr.'s realistically artistic farm house studies and Raymond Parsson's and W. A. Bohnard's water colors received merited praise.

The exhibits of the Water Color Society and the Cleveland School of Art added decidedly charming bits of color.

A design of a pumping station for the District of Columbia, by W. B. Wood, gave suggestions for the municipal improvements which are too sadly neglected. Cleveland is soon to suffer from a new pumping station designed by engineers in the water works department.

The feature of the exhibition which attracted the greatest number of people was the competition drawings for the Cleveland Post Office, Custom House and Court House. The drawings of all the competitors except those of the winner, Mr. A. W. Brunner, were hung. Mr. Brunner's drawings were in Washington and could not be obtained, but a photograph of the Superior street elevation gave opportunity to study the design with that of the others. A pleasing feature of this part of the exhibition was the almost unanimous verdict that the best design had been chosen. All the designs were along classic lines and may be thus briefly summarized: A. W. Brunner, scholarly, thoughtful, rational; J. Milton Dyer, strikingly similar to Mr. Brunner's design and may be characterized in same manner; Cope and Stewardson,

carefully studied, yet not entirely satisfactory. Effect too low for a five story building. C. F. Schweinforth, careful, painstaking, well proportioned design; F. S. Barnum & Company, well proportioned, vigorous, good detail, would have been improved by an exposed roof. One of the best rendered designs. Green & Wicks, good detail, not harmonious and satisfying; H. C. Koch & Company, carefully rendered and good proportions, but influenced too much by the winning design of the Indianapolis Post Office; Hill, Totten & Rogers, carefully studied but not wholly satisfying; Mead and Garfield, lacking in harmony; Lehman & Schmitt, weak in column treatment; Holabird & Roche, heavy; Geo. F. Hammond, out of place and ill-proportioned, attic story spoiled what otherwise might have been a good design; John Eisenmann, erratic.

Taken all in all the exhibition was a success in inspiration and in opportunity to study the drawings, models and sketches, and the club members feel well repaid for the hard work which always attends the preparation of such an exhibition.

ANCIENT AND MODERN LIGHTING.

IN improvements of a mechanical nature, artificial lighting shows a rapid advancement in the past thirty years. The advent of the Oxley & Enos Mfg. Co. marks the opening of a distinct epoch in the re-union of science in lighting and art in illumination. The late discoveries of science in the qualities and powers of various lights have given a foundation bare and harsh on which the Oxley & Enos Mfg. Co. practice a rare and skillful touch in embellishing and controlling its crude forms.

We know that the first method of lighting was crude, being a flickering light from a burning log or the blazing of a pine torch. Later on papyrus or rushes did duty, the strips being first dipped into pitch, then in a coating of tallow or wax, finally developing into the candle, which will ever have its place in the artistic lighting of the home. But as the desire for art and knowledge increased, the lighting apparatus became an artistic feature, the ancients paying but little attention to the combustible properties, provided the vessel which contained the fluid was shapely in form, for in the ancient house art governed everything. The lamp really owes its origin to the Egyptian, this household utensil dating back as far as the time of Moses. From Egypt this instrument for lighting was carried into Greece and consecrated to Minerva, the goddess of learning. After some time it made its way into Rome, and there took greater beauty in a variety of utensils classed under the name of candelabra.

These ancient lamps were often masses of exquisitely wrought metal, with figures in relief, or rich silver inlays, and were so classical as to form individual decorations for even the most elaborate rooms.

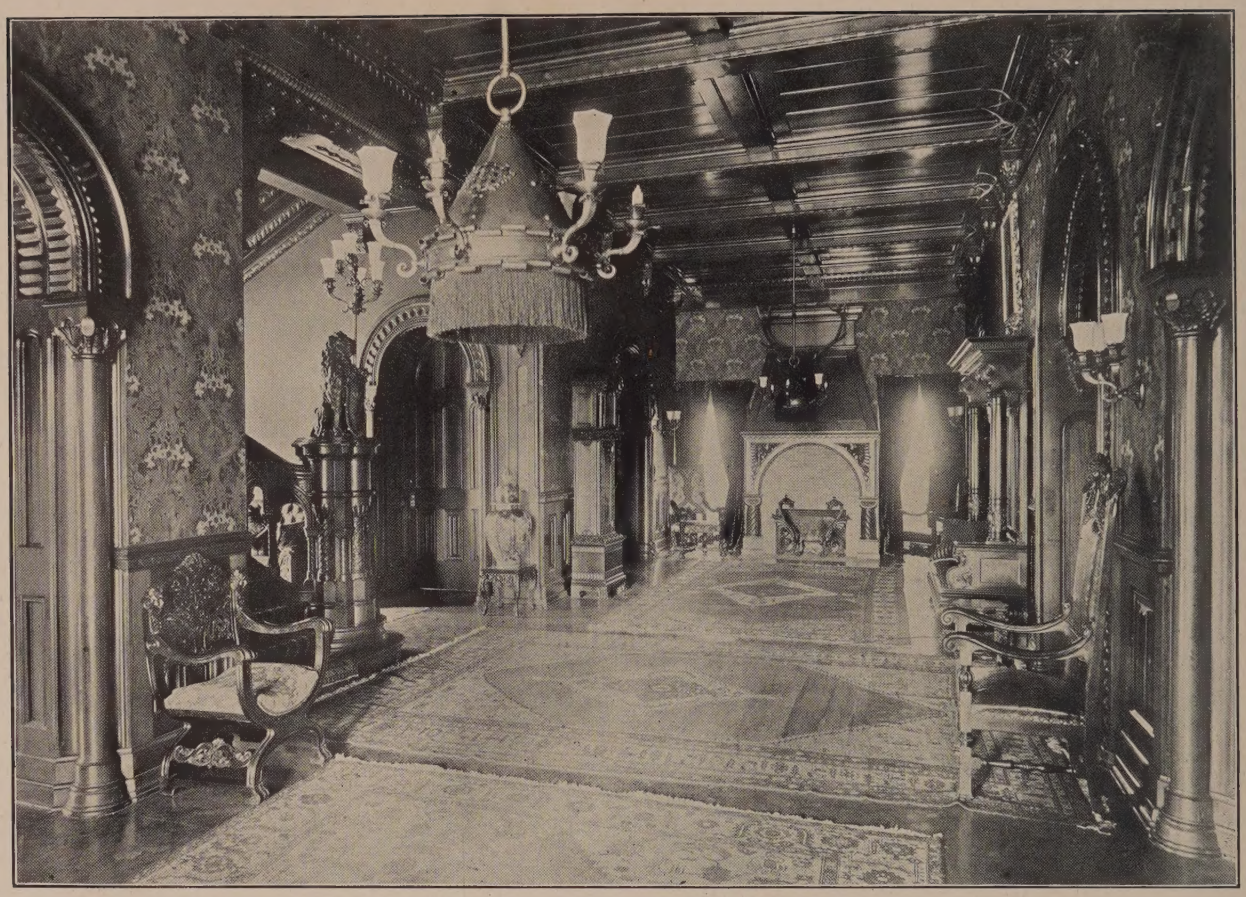
At the beginning of the sixteenth century a love of luxury increased, and with it a "refinement of gentle manners and ripe culture." In this period a new epoch declared itself in the development of the arts and handicrafts, so that the beautiful became the harmonious spirit everywhere. About this time the metal worker arose, and with a master hand showed his talent in splendid device, like the torch bracket, ceremonial lamp, lantern, sconce and finally a form of metal work like that of a chandelier. The torch bracket made its appearance in a variety of designs, the human figure often forming a graceful center attraction while bearing the weight of the ornamental cup, which held the oil.

The Colonial house presented splendid equipment in brass for both mantel and fireplace, the walls decorated by broad massive mirrors, hung in spaces which showed their beauty, their carved frames picked out in French gilt. The mantel, painted in an ivory tone, had all the devices of the Empire wreath. In the center an antique clock of silver and gilt, with musical chimes, tolled the passing hours, while on either side stood the stately candelabra, and as a finishing touch, candlesticks rested in dignified silence on each corner. For the side lights the sconce did duty—a massive round reflector, with sockets holding the burning candles. From the ceiling hung the crystal chandelier, a glittering mass of scintillating light, on which myriads of cut glass pendants, like diamonds, shed a sparkle of brilliancy like that of the noon-day sun.

But with the appearance of gas came the degeneration of lighting art. The artisan, at that time solid as a machine, knew little of good form or style: the designer, like his workman, considered only the practical part, and in the wonder of how much money would change hands art was forgotten. So a fixture was made which slowly but surely crept into the house of the rich and poor; an article for household use, of good service in its way, but without grace or beauty. Hundreds were made and sold, the purchaser, not knowing the principles of ornamentation, blindly accepted the designs, flattering himself that no better could be bought in the market. So the public, unlike the public of to-day, were unable to help themselves, and the chandelier, with its side brackets, on purely mechanical methods became a common-place article serving one purpose, that of lighting.

To one contemplating a home, lighting should be one of the first considerations, taking, as it does, as prominent a part as the wall dressing, floor coverings or draperies, and with the use of electricity, we are given to-day the opportunity of combining the ancient mode of lighting with the most flexible illuminating power ever discovered, hanging from our ceiling a lamp or electrolier, and placing on our walls brackets in designs to please the most fastidious, each in turn representing an era, on lines strictly correct in all details.

A well-known author has declared that "life began when gas was lit. A room should have space, color, light and tone; neither emptiness nor profusion, neither glitter nor dreariness. There should be breadth and substance, charm for the eye, restfulness for the soul, and animation for the spirit."



HALL IN CINCINNATI RESIDENCE. Rohrheimer & Hays, Architects.

MANTELS.

THE Bradley & Currier Co., 119 and 121 West 23d Street, New York City, is, in commercial circles, considered an authority in all matters pertaining to its several specialties. It is the aim of this firm to maintain precedence in style as well as excellence of manufacture, and to keep its great establishment continually supplied with the very best to be found in its particular line.

In imported marble mantels they show the finest and most desirable products of French art, executed in Rouge Royal, Blanc Claire, Sarancolin and Pavonnazza marbles after the Empire, Louis XIV, XV and XVI. These, as all who are intelligent in such matters readily admit, are positively unexcelled in every particular.

The French mantels boast a style and possess a finish exclusively their own, and having made selection of any one of the foregoing patterns, the purchaser has the supreme satisfaction of knowing that he has secured the best to be had, the choicest and most desirable of all its class.

As for the wood mantels manufactured by this firm, their superiority over others in design and finish is attested by the unceasing demand which originates at every point of the compass. In this department the Bradley & Currier Co. stands positively unrivalled. Its chief designer is one of those exacting and restless spirits that is never satisfied with actual accomplishments or past successes, and is continually seeking out new and novel inventions, so that all products of this character, for which the Bradley & Currier Co. holds itself responsible, are found to be not only surpassingly good, but fresh, unique and absolutely up to date.

Fully to answer the incessant calls for these products with which the best people, far and near, are familiar through actual contact or friendly recommendation, would require a plant many times the size of the present quarters occupied by this company.

All that the firm can do, when it has reached the limits of its capacities and accomplished its utmost, is merely to approximate satisfaction of the almost universal demand. The resources of this great and masterful establishment would be incomplete without the ability to offer the public all that is best, newest and most desirable in the way of tiling and ceramic mosaic, in which special department the Bradley & Currier Co. admits no rival. It is equally incumbent upon them to keep in store all manner of iron and brass fireplace appurtenances, most of which represent special designs original with this company, and only to be found in their capacious showrooms.

It seems almost incredible that common iron and mere brass can be wrought into patterns and shapes so graceful and exquisite as result from the artistic

genius and skill of those who make this a specialty in the employ of the Bradley & Currier Co. Many of these products are so dainty as to seem almost poetic—something sonnet-like in metal.

In a word it may be said they attain the highest possible standard of excellence in all that they make or sell. Compared too with this elevated standard the firm has adopted a scale of prices which never appears unreasonable, and often seems quite insignificant. It is such establishments as this that give help and lend honor even to so great a city as New York, and that constitute most important factors in its immense and always increasing commerce.

ASBESTOS.

THERE is probably no production of inorganic nature about which there is so much popular misconception as Asbestos. It is vaguely understood that the principal claim of this remarkable product to attention is that it cannot be consumed by fire. It now finds its way in some form or other into every place where steam is used. Most of the Asbestos used is produced by Canada. Practically the entire yield is consumed in America.

As producers of Asbestos materials, the H. W. Johns Mfg. Co. of New York City, have for many years occupied a place of supremacy. The adaptability of Asbestos in new fields is practically illimitable and this has resulted in the development of a large number of varied products by the Johns Company, who are continually introducing new specialties and are always on the lookout for improvements and suggestions in their line of manufacture.

Among the various products of particular interest to architects and builders are Asbestos Building Paper, Sheathings and Lining Felts. In these forms it has become indispensable in building; as a non-conductor of heat, as a barrier against fire in dry rooms, air shafts and switch boxes, as a deadener of sound for floors and partitions. It is fire-proof, vermin-proof and odorless and as such its advantages have become widely established.

The Asbestos Pipe Coverings of the H. W. Johns Mfg. Co. are well recognized as standards. Among them is Asbestos Fire Felt Sectional Covering which stands at the head of their list. The same material in sheet and roll form is widely used for covering boilers, hot water heaters, house heaters, and in fact all kinds of heated surfaces. Their latest steam pipe insulator "Asbestocel," is of particular interest to builders, because of its low cost and high efficiency; is made of corrugated Asbestos Paper rolled in sections to fit all standard size pipes. In this material the corrugations run *around* the pipe so as to form a series of closed air spaces. This material also comes in sheets of varied thicknesses and in the form of one and two-ply papers. It is particularly efficacious for all forms of heat insulation and buildings of every sort. These materials are used in all the largest buildings in various sections of the country and by the Government.

Another use to which the H. W. Johns Mfg. Co. puts Asbestos is as a body material for roofings. The indestructibility of the body fibre, its ability to withstand weather conditions and the fact that it will not deteriorate under the influence of steam, gas or acid fumes, is absolutely unaffected by rot or decay from any causes whatsoever, has resulted in its wide use on all classes of buildings, from the modern sky-scraper down to the humblest sheds. The possibility of making it in various weights and thicknesses and almost unlimited size sheets, permits its handling under every condition. The roofing remains pliable and in serviceable condition indefinitely. It can be applied by unskilled labor. Actual experience proves that it will outwear tin or iron, at a cost materially less. It is adaptable to use on work shop floors, steamer decks, piazzas, etc. Where for any reason it is desirable to use a tin or iron roof, asbestos roofings are frequently under the metal for insulating and waterproofing. Its ability to withstand fire has been demonstrated many times and under the most severe conditions possible.

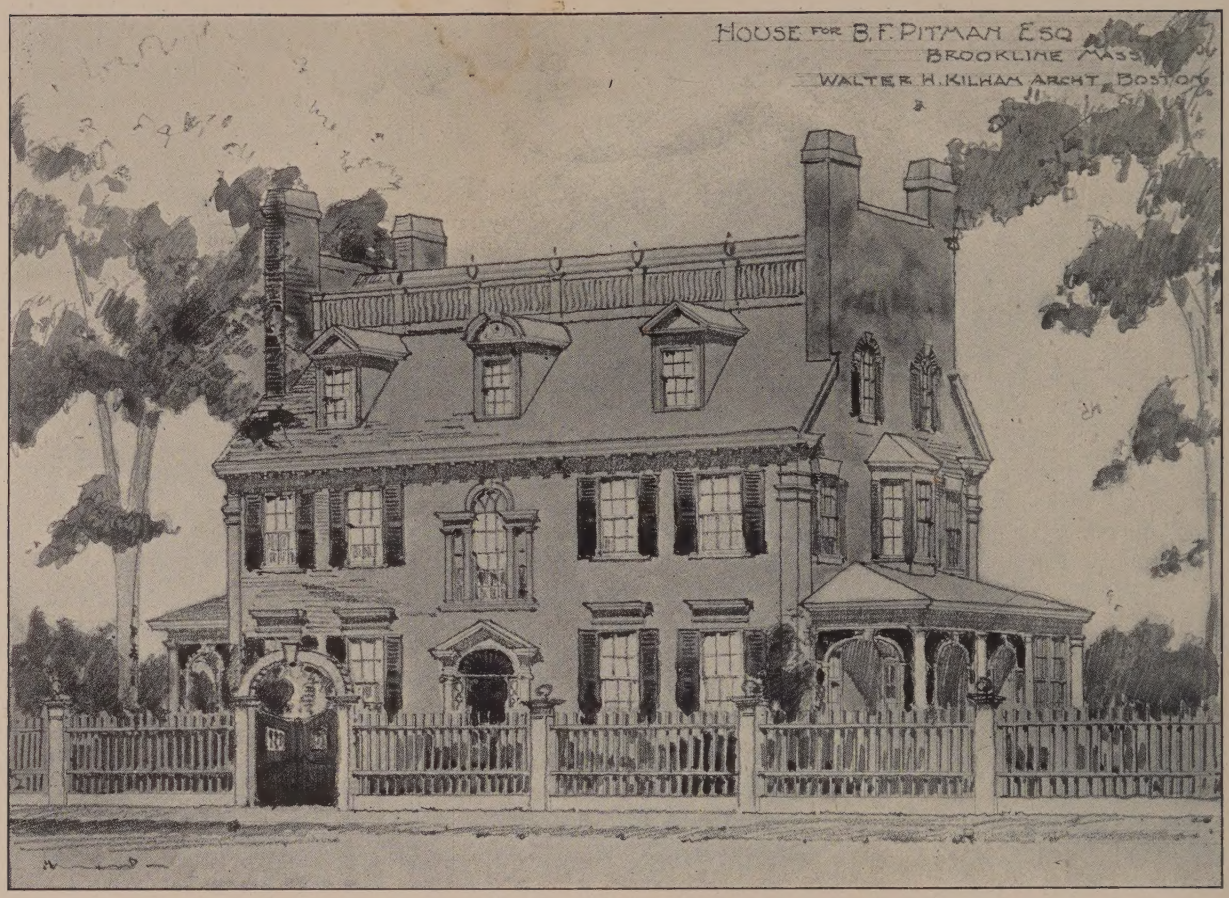
Buildings covered with Asbestos Roofing immediately adjoining buildings in which have occurred the most severe fires, have invariably withstood the flames. Burning brands and embers have piled on the Asbestos roofs and have burned themselves out, without in the least damaging the roof or the building covered with it.

H. W. Johns' Liquid Paints are composed exclusively of the best and purest materials, combined on different principles from any other liquid or mixed paints in the market. They have been thoroughly tested in all parts of the world and have been found to withstand the severe tests of climatic changes, salt water atmosphere and other trying exposures where the best white lead has failed. They are guaranteed to be in every respect strictly reliable and first-class paints of a higher grade than have ever before been offered to the public for structural purposes either in paste or liquid form and second to none in richness and permanency of color, beauty of finish, durability, uniformity and all characteristics which are requisite to form a permanent ornamental protective covering. They possess an elastic quality never before attained in any paint and are prepared ready for the brush, but may be thinned, if desired, the same as any oil paint. They are especially designed for dwellings and other exposed wood or iron structures, for which purposes they are the most economical and durable paints ever produced, while they are equally valuable for inside work and for general purposes.

The H. W. Johns Company call particular attention to the difference between their liquid paints and all other prepared paints; the best of the latter are colors ground in oil, and afterwards mixed with oil, spirits of turpentine, etc. The entire body of their paint is first ground in oil and then mixed to the proper consistency, and afterwards ground through fine mills; by this process alone can the pigments and oils be so intimately combined as to produce a perfect paint.

MAGNITE COLD WATER PAINT.

THE average person has learned, in many cases by bitter experience, that all is not gold that glitters, and many of the various articles that are set forth in such glowing colors look exceptionally well on



paper, but an actual trial does not always give the looked for result. It makes the lot of the advertiser, who really has something of merit to put before the architects, unusually hard, and oftentimes prevents something with real merit being used. One is very apt to make a sweeping classification and condemn everything of that name or nature on account of an unreliable material once used. The old saying in this case of "The way of the transgressor is hard" is something of a misnomer, as it is not the transgressor that suffers most, but the one that comes after him with an article of merit.

We are frank in saying that we have been suffering from this for some time, as on approaching an architect, either by letter or salesman, with our Magnite Cold Water Paint, it has at once been classified with unsatisfactory kalsomines, which have been tried and condemned, and it is very difficult to get an architect to allow us to explain the fact that Magnite is a *paint* although mixed with cold water, and is a totally different material from what he has been using. It contains absolutely no animal glue which rots and deteriorates with age, and which allows the material to rub and scale off the wall and which is easily affected by water. It has, however, a chemical binder which makes a coating as firm and hard as oil paint, which will not rub off nor spot and is not affected by water.

Magnite costs only a fifth of the price of oil paint, and that artistic soft effect can be obtained which will last indefinitely. It makes an ideal coating for plastered walls of all kinds. It can be frescoed and decorated, giving beautiful results. We are glad to say that many architects have taken the time to investigate this, with the result that hundreds of prominent men are specifying Magnite in all their interior work, and many schools, public buildings and private residences have been finished throughout with Magnite. This is not a new material and we desire to furnish full information on any points desired.

For ceiling work Petrol can be used to good advantage. It is Magnite reduced, that is, containing the same chemical binder, but it is not made to withstand as hard rubbing as the Magnite. For ceiling work, however, it is well adapted and is less expensive.

For the interior of mills, factories, etc., the white Magnite is an ideal paint. Being the whitest white known, it naturally gives the greatest amount of reflected light. The fact that it is endorsed by boards of fire underwriters throughout the country gives a reduction in rates in many places. The fact that it costs less than a fifth the price of oil paint, and also that it will last for years without rubbing or scaling off and dropping down into the machines, make it very desirable to use. For outside work, it is recommended for all kinds of cheap work, such as barns, sheds, fences, outbuildings, etc., but is not adapted for the exterior of fine residences.

In these days when an architect wishes to get effects at the least expenditure of money, Magnite is something that will well pay him to investigate. For pictures of a few buildings on which this has been used, see page 205.

WATER SUPPLY FOR COUNTRY RESIDENCES.

IT seems strange to many people that while the prevailing tendency is to build country houses more beautiful and to have handsome grounds, so many people will disfigure handsome places by erecting an unsightly derrick with a wheel on it, commonly known as a windmill, which might be avoided by using pumps which may be placed in the cellar of the house or in the stable. Cautious people naturally do not like to experiment with untried things, but when articles have been used for thirty years the experimental period may safely be said to have been passed. The Rider Hot Air Engine and the Ericsson Hot Air Engine as made by the Rider-Ericsson Engine Co , have been built by them and their predecessors for more than thirty years, and the very large number in use is being added to greatly every year. They are absolutely safe machines, as nothing but hot air is used as a motive power, and anyone who has enough intelligence to build a fire or light a gas jet or light a kerosene burner is competent to take entire charge of them. They are extremely simple and being thorougly built on the interchangeable plan the question of repairs is unimportant and they seldom get out of order. Hundreds of the handsomest residences in the country, designed by our leading architects, are supplied with water by means of these excellent pumps and nearly every prominent architect specifies them in his country work. The Rider-Ericsson Engine Co. have stores in New York, Boston, Chicago and Philadelphia, and a line to either of them will bring a catalogue giving full information.

GUMMEY'S ANTI-PINHOLE TIN.

GUMMEY, McFARLAND & CO., Philadelphia, have received in the six months of this year more orders than the total sales of the last two years combined for Gummey's Anti-Pinhole genuine charcoal iron plates coated with pure tin. It was a great foresight on the part of Gummey, McFarland & Co. fourteen years ago when they saw the necessity of re-introducing old-time genuine charcoal iron plates for roofing purposes. Tinners were finding their customers preferring slag, slate or tile to tin. Architects having lost faith in the Old Style and Re-dipped plates, were specifying copper for roofing. The firm, knowing there were no works in this country that could produce genuine charcoal iron plates, opened negotiations with the maker in Great Britain for the sole sale rights in this country, and the result of the negotiation was that they have the sole sale rights for genuine charcoal iron plates coated with pure tin under the name of Gummey's Anti-Pinhole. No other parties can get these plates.

Since the success of these plates has been established among the architects, builders, and roofers several parties have sprung up of late with "guarantees" and asking double prices for ordinary Terne or leaded plates to make believe they are equal to Gummey's Anti-Pinhole genuine charcoal iron plates, but roofers and railroad companies have found that Gummey's Anti-Pinhole genuine charcoal iron plates coated with pure tin are the only plates that will not go into pin holes.

"HIGH GRADE SANITARY FIXTURES FOR THE HOUSE FROM CELLAR TO ATTIC."

SO SAYS the card of The Hoffman-Hinsdale Co., 242 Water St., N. Y. Looking over their line of work as displayed at their showrooms one becomes convinced that they do make high grade goods, and can furnish all fixtures needed in a residence or public building of any kind. The fixtures are made from original designs and under patents owned by the company.

All combinations are fitted up complete prior to shipment, and the various parts are known to be properly adjusted. All water closets are tested for all defects and are tried under water from the tank or other fixture belonging to the closet. Seats are fitted to the closets and all parts belonging to a combination are given a common number in order that no error may occur where a number of closets are sent to a job.

The "Dale" Hydraulic Flushing Valve, one of their specialties, is displayed on their floor under water and over the "C. H." Syphon Closet. A more perfect working fixture would be hard to find. It is noiseless under any pressure and is under perfect control. It must be seen to be appreciated.

The "Paragon" Permanent Floor Joint for closets, furnished on all the High Grade Closets made by this company, makes possible a perfect union between closets and waste pipe. Architects know of the number of closets that fail to stand smoke test at floor joint, owing to the drying out of putty or other "flat" joints. With the "Paragon" Joint this is obviated. The joint is permanent. It cannot dry out and therefore can never leak. In "making up" the plumber saves time over the common joint.

The "Dale" Basin made by this company is a fine and sanitary fixture. Absolutely no fouling space that cannot be cleaned. Cannot get out of order and is positively "fool" proof. Misuse of fixture will not break it. Water can be held in basin indefinitely.

The "Dale" Urinal is another fixture that appeals to those who want permanent and sanitary plumbing. The action of the urinal is similar to a syphon closet. It has full free waterways and a thorough flush. The bowl holds a large surface of water with a deep seal. No metal work is in sight about the urinal when set up, only white vitreous earthenware to keep clean.

The "Purito" Syphon Closet with low tank is another fixture that commends itself. Perfect in action. Quiet, sanitary and handsome in appearance.

All these fixtures have had the test of time and as yet none of them has shown any need of repair or developed any weakness; indeed, from the care with which all fixtures are made, failure to do the work intended, and continually, would seem about impossible.

Shower and Needle Baths, Bath Tubs, Laundry Trays, Kitchen Sinks and Slop Sinks are all displayed, and the catalogue of this company will be found to contain illustrations of all fixtures mentioned, and many more.



SKETCH OF COTTAGE. Wm. A. Bohnard, Architect.

THE STEAM HEATING OF THE NEW MINT—THE "WEBSTER SYSTEM" USED.

THE handsome building which the United States Government has erected in Philadelphia as the new home for the United States Mint, is nearing completion. The competition for the heating contract was very keen among the different concerns making a specialty of this branch of work.

Warren Webster & Company, of Camden, N. J., secured the adoption of the "Webster System" of Steam Circulation, which was a part of the installation work covered by the successful bidder.

This new building is a thorough demonstration of the advantages of the "Webster System." Warren Webster & Company, in fact, consider it another monument to the appreciation and recognition of their work.

As a factor in the selection of the "Webster System" the United States appraisers' warehouses in New York City, in which the same system is employed, may be pointed to as an example of their work.

Some of the advantages that will be realized in the operation of the "Webster System" will be: The absence of back pressure on the engines in utilizing the exhaust steam for heating purposes, thus saving money in the operating expenses; an efficient and noiseless circulation of the exhaust steam; a modulation of temperature when desired in each unit of radiation to be controlled by the occupants of the different rooms; the saving of all condensation which is returned to the boilers; the absence of air valves on each radiator, etc. Their catalogue will be a valuable addition to any architect's library.

PLASTIC SLATE ROOFING.

THIS now familiar material for a weather roofing over boards or concrete is rapidly coming into general use for all classes of buildings. Its initial cheapness, combined with long guarantees protecting owner from all subsequent care or cost of roof, recommend it to builders. Its merits were recognized in compiling the last Building Code, in which it is specified.

The Casmento Roofing Co., 160 Fifth Ave., the leading people in this line, are now completing their Improved Plastic-Slate roofs on 17 apartment houses on 140th St., West of 7th Ave., for Messrs. Seitz & Schreiner, the prominent Harlem builders. A very complete descriptive circular is issued by this Company, also showing locations of a large number of buildings roofed by them.

ORNAMENTAL BRONZE AND IRON WORK.

THE Lobel-Andrews Co., 531 and 533 West 55th St., New York City, manufacturers of Ornamental Bronze and Iron Work, and whose advertisement appears in this issue, have one of the most complete and extensive plants to be found in this city. Their factory which occupies both of the entire buildings is fully equipped with the most modern machinery, which, together with their large and competent staff of mechanics in every department, has enabled them to execute some of the most intricate and unique designs in their line.

They have completed many of the large contracts given out in this and other cities, and in such a manner as to warrant their reference to the leading architects and

builders throughout the country. Their strong point being never to accept a contract which they feel unable to execute on time.

Of some of their work now drawing to completion they point to The Dorilton Apartment House, 71st St. and Broadway, The Touraine Apartment House, next to the Union League Club, 39th St., The Twelve Story Apartment House, 61st Street and Madison Ave., The Seligman Residence, 30 W. 56th St., built by Harvey Murdock, The Prentiss Residence, 1 Riverside Drive, The Schiff Residence, on 5th Ave., built by Farley, and numerous others in which they have furnished all the stairs complete, elevator enclosures, and other Ornamental Iron Work. Their specialty in which they excel is the finer grade of bronze and iron work.

THE BROUGHTON SELF-CLOSING COCK.

THE Broughton Self-Closing Cocks with the new China Top, marked "Hot" and "Cold" are admitted to be the finest Self-Closing goods on the market. No stronger evidence of this fact could be given than their adoption in the recent addition to the Manhattan Hotel in New York, and on the latest Pullman cars, and their steadily increasing sales. Messrs. J. B. Clow & Sons, Chicago, Ill., are the Western agents for these goods, which are manufactured solely by the E. Stebbins Mfg. Co., Brightwood, Mass. Samples furnished architects upon application.

LUXFER PRISMS.

IT SHOULD be of interest to architects to know that in addition to the old standard Copper Electro-Glazed Luxfer Prisms, the American Luxfer Prism Co. have lately introduced another method, which they have called Interlocked Copper Bar Glazing, in which is used the same standard Luxfer Prism, the same as in their original method. This system of glazing represents their latest production and offers a thoroughly satisfactory method of uniting the prism lights into large sheets. The units are joined together by continuous hollow copper bars, the outside border being also a copper bar of special section. The continuous bars are notched at intersections and securely interlocked, thus affording strength and rigidity without the necessity of any stiffening or reinforcing bars. The entire plate, although made of copper throughout, is then given an electro-copper finish.

They have also lately introduced Luxfer Sheet Prisms. These prisms are rolled in large sheets and then cut in sizes, plain or ornamental, to suit the buyer. This style Prism can be easily adopted to ornamental styles and glazing at a low cost. The great claim, however, for Luxfer Sheet Prisms is that when used in skylights, it will entirely do away with all leakages, because the plates will be in one piece between consecutive bars. This glass is made ½ inch thick in the body, which fulfills the demands of the Board of Fire Underwriters, securing for the owner or tenant who uses the Luxfer Sheet Prism Skylight, the usual reduction in the insurance rates.

They are the only Prism Light Company having either the Copper Electro-glazing, the Interlocked Copper Bar Glazing, or the large Sheet Prisms. In addition to the above they can, if so desired, furnish Luxfer Prisms with the ordinary Drawn Metal Bar Glazing.

CONDUITS AND CABLES FOR INTERIOR WIRING.

THE Sprague Electric Co., New York, manufactures the largest variety of conduits and appliances of any company in the world, and is the only manufacturer that makes a complete conduit system including all the accessories required from outlet to outlet. The Greenfield Flexible Metallic Conduit and Steel Armored Cables represent the latest and most radical advance in the art of electric wiring. They afford entire flexibility and perfect protection from mechanical and other injuries, while the cables have, in addition, a high grade of insulation. Architects and contractors will readily appreciate the importance of a material that combines all the electrical requirements with valuable labor-saving qualities. The Greenfield Steel Armored Flexible Cord for lamp pendants and portables is a new product and very desirable for use in theatres, show windows, mills, factories, engine and boiler rooms, and other places where ordinary cord is impracticable or positively forbidden. The immediate demand for the Sprague Company's products as soon as placed on the market forms an eloquent testimony to their worth.

These products are described more fully in the new catalogue which will be sent free to any one mentioning the name of this publication. Address the Sprague Electric Company at the nearest office. Its offices are located in New York, Chicago, Boston, St. Louis and Baltimore.

ART CERAMIC WORK.

FROM the origin of the world, man has attempted to express his idea in utilizing resources supplied by nature. "Clay" owing to its easy manipulation from the very first period attracted his attention, and immediately the first step was taken toward ceramic work in which to-day with the same material we are able to produce marvelous results. In the United States the greatest utilization of clay was surely manifested in the manufacture of tiles of all kinds which have been used in its largest buildings.

The pioneers of the art in the United States are, without contradiction, the American Encaustic Tiling Co., Ltd.

Without going into the detail of the great variety of tiles manufactured by this company we invite special attention to their most artistic branch, viz: Art Ceramic Mosaic, specimens of which can be seen on the facade of Hicks' fruit store, 1179 Broadway, New York. In point of wearing quality of this material, which is vitreous, there is no better, and in point of artistic effect, with over six hundred shades employed, there is nothing within human conception which cannot be executed.

Our country was the first to manufacture and adopt this beautiful product in general architecture, and it



COUNTRY HOUSE, H. S. PICKANDS, CLEVELAND. Meade & Garfield, Architects.

is only a matter of short time when there will be no building complete and modern without it.

The Studio is located at 244 W. 23d St., New York City, and architects are especially invited to call and examine their work.

TIN-LINED IRON PIPE.

WATER fit for drinking will take up nothing poisonous from block tin, while it is dangerous to health to drink water drawn from lead or brass pipes, in many localities. Lead poisoning is much more frequent than is generally realized. As it is not practicable to pipe houses with block tin, a satisfactory tin-lined wrought-iron pipe has always been greatly desired, but it has proved impossible of attainment until recently. The difficulties have been overcome, however, by Lamb & Ritchie, of Cambridgeport, Mass. Their Patent L. & R. Tin-Lined Iron Pipe unites two previously irreconcilable essentials; for the lining is equivalent to a substantial block tin pipe and yet it cannot be separated from the iron pipe, even by bending or hot water.

METAL TREADS.

THE Universal Safety Tread Co., whose advertisement appears in this number, are the manufacturers of a new departure in metal treads, which commends itself to every one who has occasion to use anything of the kind. While its use is of recognized value upon entrances and stairways of all kinds of buildings, as well as upon and around sidewalk lights, the tread is particularly adapted for public buildings, churches, school buildings, &c. Besides being an absolute safeguard against accidents caused by slipping it is practically unwearable and indestructible. It is also easily cleaned and nearly noiseless. The works of the company are located at Worcester, Mass., and at Groton, N. Y., and the general offices at 45 Broadway, New York.

LORD & BURNHAM CO., IRVINGTON, N. Y.

TO THIS firm many of the most important improvements in greenhouse construction are due. They were the first to introduce small sash bars with supporting frames, thus increasing the light. They were the first to adopt long lines of ventilators in place of those scattered here and there, thus to a great extent doing away with drafts which were an injury to the plants. Elliptical or Gothic style of curves, as contrasted to circular, were first used by them in roof construction, and at one time they held a patent upon the same. The arm, rod and worm gear ventilating machinery was invented by the late Mr. F. A. Lord (founder of this firm) in 1856, and has been used universally throughout the country for ventilation ever since. They were also the first to introduce ground glass in conservatories. They first substituted cast iron gutters and sills for wood in connection with wooden frame greenhouses, and iron frame supports for beds and tables were introduced by them even before the use of the modern iron framing. The latter they originated in 1881 and first used in an extensive range of houses for the late Jay Gould. This style of framing has since been improved, its important features patented, and the use of wood has been reduced to the least amount which was found to be practical or economical for general purposes. They have been perfecting their construction for many years, until now they believe that their greenhouses embody the highest art which has yet been attained in Horticultural Architecture.

They design, manufacture and build complete, greenhouse structures of every description, or furnish material and plans so that parties can have the erection done by local mechanics. On receipt of information as to the size and style of the building wanted, its purposes, location it will occupy, general grade of grounds, etc., they will prepare without charge suitable plans and submit the same, together with the descriptive specification of superstructure, heating, ventilation, plant tables, etc., and estimate

of the cost. On acceptance of the preliminary plans, specifications and estimates, detail working plans are perfected and the materials made ready at their factory. If a finished structure has been ordered, workmen are sent after the shipment of the material to complete the erection in every detail, leaving the house ready for planting.

PAINTS IN ARCHITECTURE.

THE conscientious architect strives always to serve the best interests of his patrons. In design he gives the best fruits of his study and genius, and in the specification of materials he selects those which he believes will give the best returns in appearance and service for the stipulated outlay. The success achieved in the results is an exact gauge of his ability and knowledge. We believe, from the increased consumption, that architects generally have realized the fact that if they wish to give their patrons the best that modern practice offers in painting materials, they must specify paints containing Zinc White. To those not fully informed upon this matter, we should be pleased to send a copy of our short practical pamphlet entitled "Paints In Architecture." The New Jersey Zinc Co., 11 Broadway, New York City.

WHEELER PATENT WOOD FILLER.

AN ARCHITECT in designing or planning a building, above everything else, takes into consideration the foundation for same. A sure foundation is very essential. The finish on natural woodwork is a building-up process, and all wood is more or less open or porous. The first step necessary is to see that all such pores are filled up and the surface made perfectly level. If in filling these pores no attention is paid as to what is put into them, unsatisfactory and evil results will surely follow later.

For many years reputable architects have recommended for this purpose Wheeler's Patent Wood Filler, knowing that this article was made from pure rock crystal silex, especially prepared therefor, and non-shrinkable, perfectly transparent in the pores and formed a permanent base for the after-finish to rest on; also brought out the full life and beauty of the wood. Often, however, something else has been substited for the Wheeler Filler by contractors and finishers, this discovery being made by the architect when he found that the finish was not as perfect as it should be, and that as it became older it shrunk, and the woodwork did not have the life and beauty that it should, and that the finish was not enduring. The Wheeler Filler being the standard, the claim is often made that other articles offered in substitution are just as good, or made the same. All such statements are erroneous; there is no other wood filler just as good as the Wheeler, nor is there any other article made the same. The process is peculiar to the manufacturers and everything entering into the Wheeler Filler is especially made for the purpose.

As a matter of economy there is nothing so cheap as the Wheeler Filler, and even if these substitutes were to be had for nothing, all points being considered in the end desired, the cost of finish is in excess of what it would be if the Wheeler was used as specified. To guard against imposition see that the name "Wheeler Patent Wood Filler," trade-mark and name of the manufacturers, "The Bridgeport Wood Finishing Co., New Milford, Conn., 55 Fulton St., New York, and 70 W. Lake St., Chicago," is on every package, and that invoices are shown by contractors for the purchase of quantity sufficient to do the work.

N. & C. TAYLOR CO.'S "OLD STYLE" BRAND OF ROOFING TIN.

MESSRS. N. & G. TAYLOR CO., manufacturers of the "Taylor Old Style" brand of Roofing Tin, Philadelphia, are issuing a series of tasteful circulars to architects and those interested in a good tin roof. The last one issued is entitled "A Few Don'ts," as follows:—

Don't specify other brands with the "Taylor Old Style." If you want the best, specify the best and nothing else.

Don't neglect to have the tin painted as soon as it is laid.

Don't use tarred sheathing paper under tin. Use red rosin-sized sheathing paper, extra heavy quality.

Don't use inferior paints. Use only metallic brown, ground in pure linseed oil, or red oxide of iron. We have it.

Don't permit acid to be used in soldering. Use rosin.

Don't forget to have tin painted under side, two coats, before laying on the roof.

Don't neglect to see that your specifications are complied with, and that the brand specified is used.

Don't specify "Taylor Old Style" "or equal," as there is no equal.

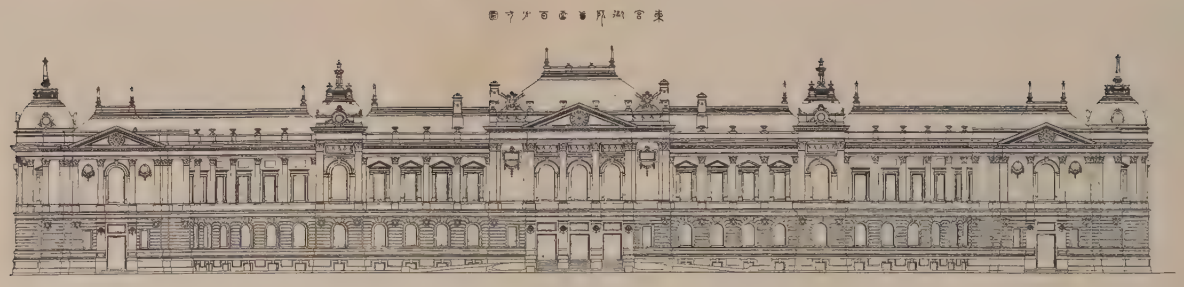
Don't specify "Taylor's Tin." Have the specification read plainly: The "Taylor Old Style" brand—IC or IX thickness.

Don't forget that the "Taylor Old Style" is manufactured only by N. & G. Taylor Co., Philadelphia. Other brands claiming to be as good are not as good. They are sold by dealers who cannot know the quality. Only a manufacturer knows that.

Messrs. N. & G. Taylor Co. will be glad at any time to send samples, quote prices, or give any general information in regard to their product. A full stock carried by all the leading jobbers in every city in the United States.

ROEBLING CONSTRUCTION CO., NEW YORK.

TWO of the largest fire-proof buildings now being erected in New York City and vicinity are the Hahne Department store building at Newark, N. J., and the new apartment hotel at 73rd Street and Broadway, W. E. D. Stokes owner. The latter building contains over 12 acres of floor space. The fire-proofing in both these buildings is being furnished by the Roebling Construction Company, 121 Liberty Street, New York City.



THE PALACE OF HIS IMPERIAL HIGHNESS, THE CROWN PRINCE OF JAPAN, LOCATED AT TOKIO.

Dr. Tokuma Katayama, Imperial Architect. Walker & Chambers, Heating and Ventilating Contractors.

THE PALACE OF H. I. H., THE CROWN PRINCE. TOKIO, JAPAN.

WE PRESENT here, an elevation and first floor of the new palace now being erected at Tokio, Japan, for His Imperial Highness, the Crown Prince, from drawings of Dr. Katayama, Imperial architect of Japan.

This building, costing over $3,000,000, will be one of the largest and finest palaces in the world, and while being built primarily as a residence for the Crown Prince, it is also intended as a memorial to the reign of the present Emperor.

It is, besides being thoroughly fireproof, also earthquake-proof; this being accomplished by the erection of very heavy walls tied and supported by a most elaborate system of steel construction. The greatest care has been taken in the planning of every detail to make this palace not only a work of art, but a luxurious semi-public building for the entertainment of Japanese Royalty.

The great banquet hall on one side and ball room on opposite side of the building, with the picture galleries, reception rooms, apartments of His Imperial Highness and Her Imperial Highness, the smoking room and several suites throughout the building, besides being artistically beautiful, will be equipped with the most modern hygienic and sanitary appliances, and this is specially true of the heating and ventilating plant, which was designed by Messrs. Walker & Chambers of New York City, who are also the contractors for furnishing and erecting this apparatus.

It required a vast amount of study and skill to provide for the installation of the great ducts and pipes for the supply and discharge of air to and from the several rooms and not interfere with the special "earthquake-proof feature." It has all been accomplished very ingeniously and the plant itself is an elaborate one.

The architect and his consulting engineers sought the best talent in this country and Europe, in connection with this important matter of heating and ventilating, and the fact that they found it here in our own city, and will use material of American manufacture entirely, in the construction of this part of the work, is another evidence of the superiority of American engineering.

MERCURY MIRRORS.

"Oh wad some ane the giftie gie us
To see oorsels as ithers see us,
It wad from mony a blunder free us
And foolish notion."

IT HAS been the aim of philosophers for countless ages to teach human beings to see themselves as others see them, with all the good and bad traits of their mental make-up laid bare before their mind's eye, and the task is still unaccomplished, but science and art have been more successful in devising means wherewith all human beings can see their physical proportions in all the varying grades of beauty and deformity.

Four hundred years ago, skillful artisans of Venice discovered the process of manufacturing mercury mirrors, and there are to-day in the palace of Versailles, France, mercury mirrors manufactured nearly three centuries ago, which continue to reflect every varying shade of color with truthful accuracy and with all their initial brilliancy.

This same class of mirror is to-day a valued heirloom in millions of families all over the world, and they are the only mirrors ever produced which will reflect all shades of color with unfailing accuracy and retain this property, with their pristine brilliancy, unimpaired for ages.

"Changes are lightsome and fools are fond of them" applies to the change that has come over the production of mirrors during the past decade. Chemistry has produced, for less money, a shoddy imitation known to the trade as Nitrate of Silver or Patent Back Mirrors, which the manufacturers guarantee not to spoil in less than one year, or they will resilver it free of cost. Think of it! A mirror that will not reflect color accurately for thirty days after it has been exposed to the light and gradually gets dim, streaked and spotted until it is an eyesore, not an ornament. This is not a fairy tale. There are millions of such mirrors to be seen, in the varying stages of decay, all over the country.

The question is, why should architects specify this temporary shoddy mirror for permanent settings when the National Mercury Mirror Company of No. 160 Fifth Avenue, New York, is prepared to promptly supply their requirements with the old-time durable Mercury Mirrors at much lower prices and in shorter time than they have hitherto been produced?

Architects should look after the best interests of their clients by specifying permanent Mercury Back Mirrors and seeing that painted back mirrors are not substituted.

STAINING AS AN ART.

THE intelligent treatment of the exterior of a shingled house is a subject of much interest to many architects. Dexter Brothers consider that they have every facility for co-operating in this matter and beg to state a few of the more important facts concerning Shingle Stain. Shingles should never be painted, as paint hastens decay, covers the grain of the shingle and costs much more than stain. Our stain will strike well into the wood, and the oil will act as a perfect preservative for years.

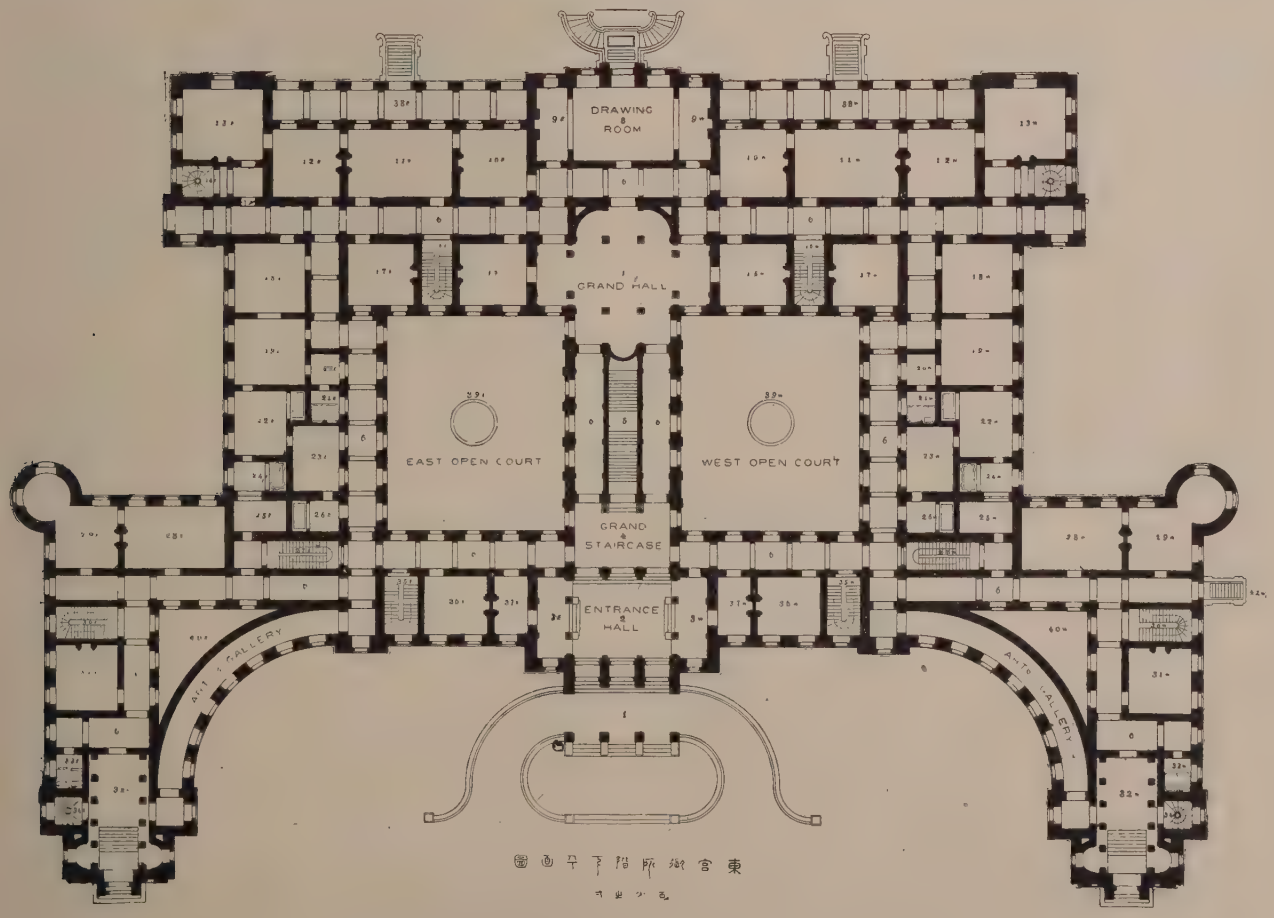
Specifications should be carefully followed up as substitution is being unearthed constantly, and to that end we invite correspondence with architects. These stains are odorless, and fifteen years constant and ever increasing use have proved their worth. Severity of climate does not affect their durability. For further particulars address Messrs. Dexter Brothers, 55 and 57 Broad Street, Boston.

DUMB-WAITERS.

THE Sedgwick Machine Works, of 110 Liberty St., New York, are not only pioneers but the largest manufacturers of Automatic Lock Dumb-Waiters and other types of Improved Dumb-Waiters and Hand Power Elevators. Mr. Sedgwick is himself an expert machinist, and a manufacturer of more than forty years experience. To his personal and indefatigable supervision the excellence of their goods is chiefly due. Mr. Wakelee, during the ten years he has devoted to the New York business, has made personal friends of architects, builders and owners with whom he has come in contact, both by his courteous and business-like conduct, and by expert knowledge in his particular line. The Sedgwick Machine Works have enlarged their factory this Spring, and their goods are being used in constantly increasing quantities both throughout the United States and foreign countries. In fact, "of Sedgwick Machine Works manufacture" has come to be the standing specification of many of our best architects in specifying Dumb-Waiters, Trunk or Invalid Lifts, Carriage, Sidewalk and Freight Elevators.

THE McCABE DOOR HANGER.

THE success with which American manufacturers have devoted their attention to builders' hardware has won for them a foremost place in the world's markets. The leading manufacturing nations admit their inability to compete with us in this field, and our sales of these goods in Great Britain, Germany and France are steadily increasing. In connection with builders' hardware hangers for sliding doors have received much attention. The sliding door is now a feature in all building, as everyone must concede the ad-



GROUND PLAN OF THE IMPERIAL PALACE, TOKIO, JAPAN.

vantage of the sliding door over the swing door. On the other hand is the vexation caused by imperfect hangers, and the lack of adjustment.

We call our readers' attention to the full line of sliding door hangers manufactured by the McCabe Hanger Manufacturing Company. Their goods have a deservedly good reputation and have been used in the Gould, Astor, Vanderbilt, Carnegie and Rockefeller houses, as well as many of the finest residences that have been built in England, Germany and France. The track is made from No. 13 gauge cold drawn steel, with all surfaces as smooth as it is possible to make them. The carriages are ball bearing, with case-hardened parts, constructed exactly the same as the bearings in bicycles, thus reducing friction to a minimum. Those for parlor or house door work have fibre wheels making the hangers noiseless. There is ample adjustment provided against the settling of the house, or warping of the doors. The manufacturers will be pleased to send catalogue and quote prices on request. See advertisement page ii.

FIRE-PROOF FIXTURES.

THE Atlantic Mutual Company in the equipment of their new offices in the New Atlantic Building in this city have shown the same progressive spirit and advanced ideas employed in the entire structure. A glance through these interiors reveals how fully the points of protection against fire have been appreciated by them. As might be expected from a corporation that has made the question of fire prevention a thorough study, this has resulted in the employment of only non-inflammable fixtures in the equipment of their general office and quarters occupied by departments having valuable records, records equally valuable to both the insurer and insured. These fixtures are chiefly built in steel and bronze, and in design and construction are a revelation of the extent to which fine metallic cabinet work has been carried. The fixtures are in pleasing harmony with the architectural treatment of the rooms, and a noticeable feature is the rich and solid effect presented suggestive of both security and durability. Far from offering a hard or repellant impression, the design and color treatment and the bronze enrichment is such, that a strikingly attractive interior is presented. Marble is employed in the bases throughout and its introduction serves to heighten the effect, the rich tints of this material being effectively contrasted with lines of fine bronze mouldings. The work embraces a wide range of interior fittings, counters, partitions, screens, desks, tables, cabinets, wardrobes, &c., being constructed throughout of the same material.

A particular feature to be observed is the economy of space secured by the thinner divisions possible in this construction. The utmost convenience of arrangement is also secured, being supplemented likewise by a large variety of ingenious devices introduced for the storage of books and papers, which, in addition to the security they afford, are valuable as time and labor-saving convenience.

The work mentioned is from the works of the Art etal Construction Co. at Jamestown, N. Y., whose New York offices are in the New York Life Building. The entire product will be found worthy of the examination of officials and architects planning to secure permanent and absolutely secure interior equipments.

THE FLUSHOMETER—KENNEY SYSTEM.



Showing application of Flushometer.

THE modern way of operating and flushing water-closets in public and private buildings by means of the Flushometer marks a distinct advance in sanitary plumbing, and solves many troublesome problems in a unique but thoroughly practical and satisfactory manner.

The installation of this system does away entirely with the individual overhead flush-tank, with its troublesome pull and chain and ball-cock, and there is practically no rushing and hissing of the water in the bowl. In buildings where there are a number of water-closets one tank is sufficient for them all. This of course simplifies the installation.

The absence of flush-tank overhead saves room and disfigurement of the wall, and enables the architect to arrange his plans more conveniently than by any other system, permitting the placing of windows in the space that would otherwise be occupied by the flush-tank, and the construction of bathrooms and lavatories of the airiest, lightest and most healthful description.

The Flushometer is applied close to the bowl, and no space exists for foul air or odor to collect, as is the case in an empty flush-pipe from the ordinary tank. To operate the device the handle is simply pulled forward and then let go, when the valve will close slowly of its own accord.

When one considers the advantages that lie in the adoption of the Flushometer and that it may be obtained at less expense for installation and maintenance than is possible by any other means, the wide popularity of this system of operating and flushing water-closets is readily appreciated.

Prominent architects everywhere are specifying the Flushometer, and among buildings lately equipped may be mentioned the Hotel Manhattan Addition, Broad Exchange Building and Broadway Chambers, New York City.

The Kenney Company, 72-74 Trinity Place, New York City, who are the sole manufacturers, will be pleased to furnish further particulars and list of recent installations upon application.

RESIDENCE, JOHN G. AGAR, NEW ROCHELLE, N. Y.

Clinton & Russell, Architects.

Wurts, Photo.



LIBRARY, RESIDENCE, JOHN G. AGAR, NEW ROCHELLE, N. Y.

Clinton & Russell, Architects.

Wurts, Photo.



Wurts, Photo.

Clinton & Russell, Architects.

HALL, RESIDENCE, JOHN G. AGAR, NEW ROCHELLE, N. Y.



DINING ROOM, RESIDENCE, JOHN G. AGAR, NEW ROCHELLE, N. Y.

Clinton & Russell, Architects.

Wurts, Photo.



Wurts, Copyright, 1901.

LIBRARY, YALE CLUB, 30 WEST 44TH ST., NEW YORK.

Tracy & Swartwout, Architects.



Wurts, Copyright, 1901.

GRILL ROOM, YALE CLUB, 30 WEST 44TH ST., NEW YORK.

Tracy & Swartwout, Architects.

THE "VULCAN" LOCKS.



THE age of iron is past and the age of steel is fully born. This new material, and the latest machine processes, have been utilized to create a new American product, viz., the "Vulcan" line of Builders' Door Locks, formed wholly from wrought materials, machine-made throughout and interchangeable in all its parts. The "Vulcan" lock, first introduced in 1897, embodies new principles, new materials, new designs, new mechanism and new results.

The case, cap and internal mechanism are all of cold rolled steel; the front is formed of a base-plate of the same material, over which is drawn a heavy skelp of wrought bronze or brass; the bolt-heads are of swaged bronze; and the keys, shown by Fig. 1, are of cold forged steel.



FIG. 1.

The Cycloid Knob Action, for transmitting motion from the knob to the latch bolt and consisting of intergeared levers with pivotal motions, as shown by Fig. 2, is substituted for the sliding action heretofore generally in use. The construction provides two springs, one acting on the latch-bolt only and both acting on the knob, thus giving the most perfect "easy spring" action. All of the working parts are provided with broad bearings, accurately fitted by machine processes.

The Compensating Hub, also shown by Fig. 2, one of the most important improvements, was first introduced in the "Vulcan" lock and is now used also in the Yale Locks. A mortise lock is attached by its front to the edge of the door, whereas the plates which carry the knobs and spindle are attached at a point several inches back from the edge, and the shrinking and swelling of the wood between these points tends to disturb the knobs, which either must be loosely fitted or else will bind. As shown in the illustrations, Figs. 2 and 3, the "compensating hub" has a rectangular opening which fits the spindle vertically, but which is considerably elongated horizontally, thus enabling the spindle to rotate the hub and yet permitting horizontal motion between the spindle and hub to compensate for any shrinkage or swelling of the wood. This simple device makes possible the use of perfectly fitted knobs.



FIG. 2

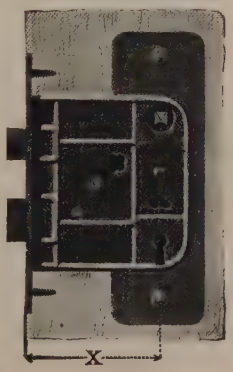


FIG. 3.

The Bracket Bearing, shown by Fig. 4, substitutes for the loose and inefficient thimble heretofore used a bearing which perfectly guides and supports the knobs. A lock spindle is practically a short piece of shafting, with a wheel or pulley (the knob) on each end. Obviously the bearings of such a shaft should be as far apart, and as near to its ends as possible. In common locks, on the contrary, they are at the surface of the door and therefore near together. The bracket bearing has long been used with the Yale Locks and is now associated also with the "Vulcan" locks. It consists in a construction of the knob shank and its supporting thimble, such as to bring the bearings or points of supports as close to the knobs, and therefore as far apart, as possible.

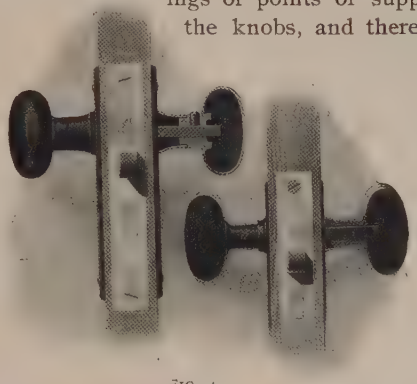


FIG. 4.

The illustration herewith shows the old and the new constructions, the dotted lines indicating the play or "wabble" of the common knob, with its clumsy adjustment by means of a row of screw holes in the spindle, supplemented by tin washers in a loosely fitting thimble close to the surface of the door.

The Triplex Spindle, first introduced with the Yale Locks, was adopted also for use with the "Vulcan" locks.

As shown by Fig. 5, the spindle consists of three triangular rods which, when united, form a square spindle, to one end of which one knob is permanently pinned. The other knob carries a set-screw which bears on the central piece, or wedge, of the spindle, and the tightening of the screw expands the spindle, forcing it into frictional engagement with the knob shank, thus holding the knob securely at any point, affording perfect adjustment without resort to washers, and eliminating all looseness or rattle of the knobs.

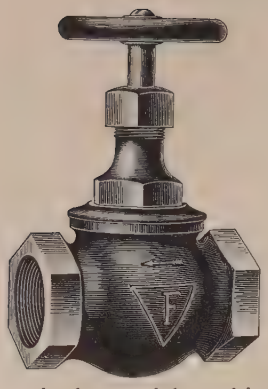
The mechanical combination thus formed comprises the triplex spindle, admitting of perfect longitudinal adjustment of the knobs, the compensating hub, which eliminates disturbance from shrinkage and swelling of the wood, and the bracket bearing, which supports and guides the two ends of the spindle close to the knobs. The result is a perfect mechanical assemblage, easy to apply, eliminating all causes of future disturbance and certain to give permanent satisfaction.



FIG. 5.

Exhibit rooms for the convenience of architects and their clients are provided at the Company's General and Branch Offices. These offices are located as follows: General Offices, 9, 11 and 13 Murray Street, New York; Branch Offices, 131 Wabash Avenue, Chicago; 630 Witherspoon Building, Philadelphia, and 12 Pearl Street, Boston. The works are at Stamford, Conn.

FAIRBANKS' VALVES.



THESE Valves have a known reliability, and many points of superiority in construction over any other valve manufactured. They are so made that the usual defects known to exist in Globe Valves are eliminated. They are provided with Vulcanized Asbestos Disc Rings. The Ring is composed of the fibre of Asbestos, to which is added, by patent process, waterproof vulcanized material, making a very durable packing which will not crack or flake off. It is held central on its seat by guides cast on the body of the valve. It is also secured to the spindle without the use of nuts, screws, pins, wires, or anything that is liable to become detached while in use.

The Vulcanized Asbestos Ring is forced into a brass holder, and the metal is spun or turned over the edges of the ring, so it cannot drop out.

The Disc consists of ring and brass holder complete, ready for use, and can be put into the valve by simply removing the bonnet, slipping the old disc from end of spindle, substituting new one and replacing bonnet; the whole operation requiring only a few moments' time and no skill.

These Valves have a raised round seat upon which scale, grit or sediment is less likely to lodge than on the broad, flat seats commonly used. The Stuffing Boxes are all packed with Braided Round Asbestos Packing, which is very durable and cannot be blown or washed out.

The Check Valves, with Straightway, Swinging, Rotating Disk, are unequaled for use in connection with Return Steam Traps, Inspirators, Injectors, Pumps, etc.

The Valve is easily reground by removing Angle Plug (shown in cut); insert a screwdriver into a slot in disc head; revolve it sufficiently to re-seat it, without disconnecting from the pipe.

In Gate Valves the seat rings are composed of specially treated asbestos fibre, sufficiently elastic to compensate for the usual expansion or contraction.

The gate is a double-faced, wedge-shaped casting, with side grooves by means of which it slides on guides in the Valve. These hold it central and relieve the spindle of strain from pressure on either side of the wedge.

These Valves, being double seated, can be used with the pressure applied at either end. They are made with non-rising and rising spindles.

Vulcanized Asbestos Packed Iron Cocks have dovetailed U-shaped grooves in the body packed with prepared asbestos, and a vulca-beston ring is used on the shoulder of the plug for top packing.

The plug is of standard taper, carefully finished, and barffed to render it rustless. It has no metallic bearing, coming in contact only with asbestos, the elasticity of which compensates for the differential expansion and contraction of the plug and body. The gland admits of adjustment by means of its bolts.

The Fairbanks Company also manufactures High Pressure Valves, adapted to any required pressure, and have houses in New York, Albany, Baltimore, Boston, Buffalo, Philadelphia, Pittsburg, New Orleans, Montreal, Canada; and London, England.

* * *

NEW YORK & ROSENDALE CEMENT CO.

IN THE first three views we show the quarries from which the New York & Rosendale Cement Co. get stone to make their high grade Rosendale Hydraulic Cement, known as the "Brooklyn Bridge" Brand. The other two views show part of the kilns and milling process.

This brand of cement has been before the public for the past twenty-five years, and has been used for all kinds



of masonry work in and out of water, and is acknowledged to be the Standard Rosendale Hydraulic Cement.

This brand is made from stone, which before calcination is as hard as flint. While the minimum tensile tests for twenty-four hours and seven days are 75 and 120 pounds per square inch, the long-time tests show a de-



cided steady increase and compares favorably with Portland Cement, and finally reaches its natural state.

To-day when a client asks an architect the question, "What is Rosendale Cement?" he stops to think before giving an answer. Why?

Previous to the past few years he would have answered the question at once by saying that it was a natural cement of superior quality, manufactured in Ulster

County, N. Y., and suitable for all kinds of masonry. Also, that each manufacturer had a distinct brand with his name and address on each barrel.



To-day a number of brands of natural cement are made in Pennsylvania (in some cases without the manufacturer's name on the barrel), which are falsely called



Rosendale Cement. They do not compare in quality or color with New York State Rosendale Cement, therefore the name "Rosendale" is misleading to the architects and mason builders.



Specifications are usually drawn specifying that the "Best Rosendale Cement" shall be used. If architects instead of using the word "best," would call for a particular "brand or brands," of Rosendale Cement, manufactured in Ulster County, N. Y., of well-known reputation, they would get what they wanted, and important work would not be delayed by poor grades of Pennsylvania Natural Cement being delivered. Owing to frequent trouble arising from this cause, some architects have lost confidence in Rosendale Cement.

KOLL'S PATENT WOOD COLUMNS.

HARTMANN BROS.' MFG. CO., 428 to 438 West Lincoln Ave., Mount Vernon, N. Y., have had a very busy winter and spring for the sale and manufacture of their Koll's Patent Lock Joint Staved Wood Columns. These goods are specified by most prominent architects throughout the country. They have made and shipped recently to the Pan-American Exposition at Buffalo, N. Y., three separate exhibits. First one for the firm of A. A. Marks, New York City; second one for the Hecker-Jones-Jewell Milling Co., of New York City; and the third one for the United States Printing Co., of New York City. They also made a large shipment to Mr. Chas. M. Whitney's house, Centerport, L. I.

LAUNDRY MACHINERY.

THE laundry for the modern hotel or institution is as important in its equipment as the kitchen, boiler, dynamo rooms or other practical departments. The selection, construction and setting of the proper appliances to launder large quantities of linen requires knowledge which is now possessed only by the skilled manufacturer. Such, beyond doubt, is the Troy Laundry Machinery Company, Ltd., whose advertisement is found in our pages. They have a skilled corps of trained men who are prepared at all times to furnish plans and estimates, also to give helpful suggestions of any kind to architects needing their services, and will arrange by appointment to show their machinery in practical operation in leading hotels and institutions in any part of the country.

This company, undoubtedly the largest of its kind in the world, has been in existence for more than a quarter of a century. They manufacture an extensive line of laundry machinery, cataloguing some 300 appliances, and they furnish every fixture and supply required for the laundry. They have just issued their new "12th edition A" catalogue, which will be mailed upon application.

THE "MONARCH" SASH CHAIN.

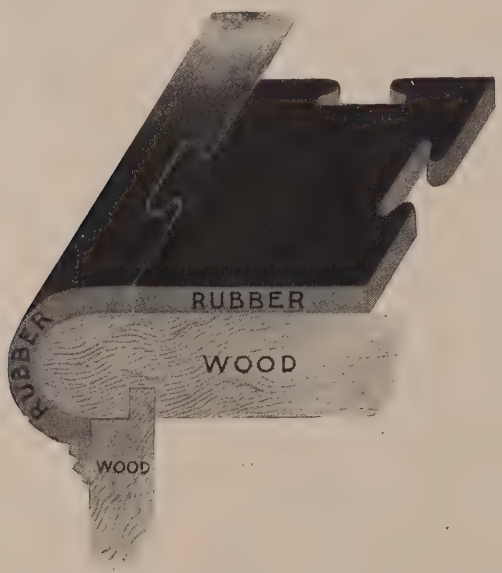
IT will be a matter of interest to architects to know that notwithstanding that "bronze" sash chain is specified, and passed in many cases by them as such metal, there are hundreds of buildings in every city in the country in which Steel Sash Chain bronze-plated can be pointed out, and we know of no better way for them to protect themselves against such sharp practice than to specify "Monarch" Chain made by the Bridgeport Chain Co., Bridgeport, Conn., which has a distinctive feature in the way of being flattened and is proof that genuine goods are being used.

INTERLOCKINC RUBBER TILING.

A NOISELESS, slow-burning, sanitary floor has been the aim of architects for years. The good qualities of rubber floor covering were understood, but the unsightliness in the forms hitherto furnished confined it to occasional use at the entrances of business and public buildings. Seven years ago a process was invented producing rubber flooring in an entirely new form, completely free from its previous drawbacks. In the shape of Interlocking Rubber Tiling, it is now furnished in a great variety of colors and designs, and is adapted to every interior where the ordinary tile can be used, and to many where the latter would be unsuitable.



By the new process, rubber is moulded into tiles 2⅜ inches square by ⅜ inch thick. Each tile is interchangeable and distinct, but shaped so as to lock firmly into the surrounding tiles. (See cuts). Nos. 1 and 2 show the tile in its two regular shapes; Nos. 3 and 4 are intended for finishing edges, and Nos. 5 and 6 for corners. The section of stair tread shows the manner of fitting the tile to treads, the edge being finished off with a rounded rubber nosing.



The interlocking feature produces a solid rubber floor, unlimited in size and shape, with all the durability of the hard tile, without its liability to damage. The elastic nature of the material allows it to conform to the settling usual in large buildings, without causing the tiles to crack or come up. Each tile is water-proof and germ-proof, and the interstices are filled with cement of the same quality. This makes a floor of high sanitary value, and has led to its use in hospitals.

The yielding nature of the material forms a cushion to the foot, on the principle of a rubber heel, but superior to it, owing to the rubber cushion being in contact with the entire surface of the foot, and not merely with the heel. As a result the rubber tile floor never produces callosities or lameness. This feature especially adapts it for banking rooms, billiard rooms, kitchens, pantries, etc., where a hard, unyielding surface would be entirely unsatisfactory. The tiling requires no special foundation; it can be laid directly upon existing floor, no matter what its material, simply increasing the thickness of the floor ⅜ of an inch.

The new material has been endorsed by a number of prominent architects and engineers, and is now in use in many of the large office-buildings, banks and residences. A prominent example is the Empire Building, Broadway and Rector Street, New York. Here the tile is laid in the main corridors, elevators, vestibules and booths. Owing to the building being practically the Wall Street terminus of the elevated railroads, thousands of people pass through the corridor daily, and the architects, Messrs. Kimball & Thompson, consider it especially important to have a floor of extreme durability, while at the same time of a design and color which would harmonize with the costly walls and general finish of the corridor. After a careful investigation the Interlocking Rubber Tile was selected as combining in the highest degree these two essential qualities, while at the same time giving a noiseless and non-slippery flooring. For the same reason Messrs. Clinton & Russell have selected it for the main corridor in the Broad-Exchange Building.

Among other buildings in which the tiling is used are: Mrs. Elizabeth Clark, residence, New York City, Ernest Flagg, architect; Grant B. Schley, country residence, Far Hills, N. J., Rossiter & Wright, architects; Mrs. Minnie E. Young, residence, New York City, Hiss & Weekes, architects; Mrs. J. C. Hoagland, residence, New York City, John H. Duncan, architect; Raymond Hoagland, residence, New York City, C. P. H. Gilbert, architect; E. N. Herzog, residence, New York City, Heins & LaFarge, architects; Dr. George R. Fowler, Brooklyn, Wm. B. Tubbey & Bro., architects; Geo. C. Clausen, residence, Port Chester, Hy. F. Kilburn, architect; Hotel Manhattan, New York City, H. J. Hardenbergh, architect; Park Row Building, New York City, R. H. Robertson, architect; Temple Bar Building, Brooklyn, Geo. L. Morse, architect; St. Agnes School, Brooklyn, T. F. Houghton, architect.

Interlocking Rubber Tiling is manufactured and sold by the New York Belting & Packing Co., Ltd., 25 Park Place, New York City.

ARCHITECTURAL IRON WORK.

THE Hecla Iron Works, 118 N. 11th St., Brooklyn, New York, who have recently acquired additional property on which to extend their plant, which now covers fifty city lots, have at present under

way or have recently completed many important contracts. Among them are the following, viz :—

Colonial Theatre and Office Building, Paddock Building, and Massachusetts State Hospital Buildings in Boston, Mass.; also Alex. Brown & Sons Bank, Baltimore, Md.; The Terminal Station of the Pittsburg & Lake Erie Railroad, Pittsburg, Pa., Prudential Ins. Co.'s 3 new buildings and addition to main building, Newark, N. J., and the following in New York City, viz: Custom House, Hotel Manhattan, Power Stations of the Manhattan Electric Railroad Co., and of the Metropolitan Street Railway Co., Simpson, Crawford & Co.'s Building, Additions to Morse Building, Broad Exchange Building, Grand Central Station.



This company manufactures every form of architectural and ornamental bronze and iron work, including the steel construction of buildings.

THE ARTISTIC ADVERTISEMENTS OF CABOT'S CREOSOTE SHINGLE STAINS.

NO ADVERTISER has been at greater pains or expense to place his goods before the public in an artistic manner than has Mr. Samuel Cabot, of Boston, whose advertising matter is, to quote Van Brunt & Howe, "on a par with his excellent goods."

As is well known, the invention of shingle stains by Mr. Cabot inaugurated an entirely new system of exterior coloring, and one that is very largely responsible for the present wide vogue of the shingled house. In putting this new idea upon the market Mr. Cabot determined that his advertising should reflect the artistic qualities of the Stains, and this policy has been so successful that no other advertisements are more cordially received or carefully scrutinized by architects than his.

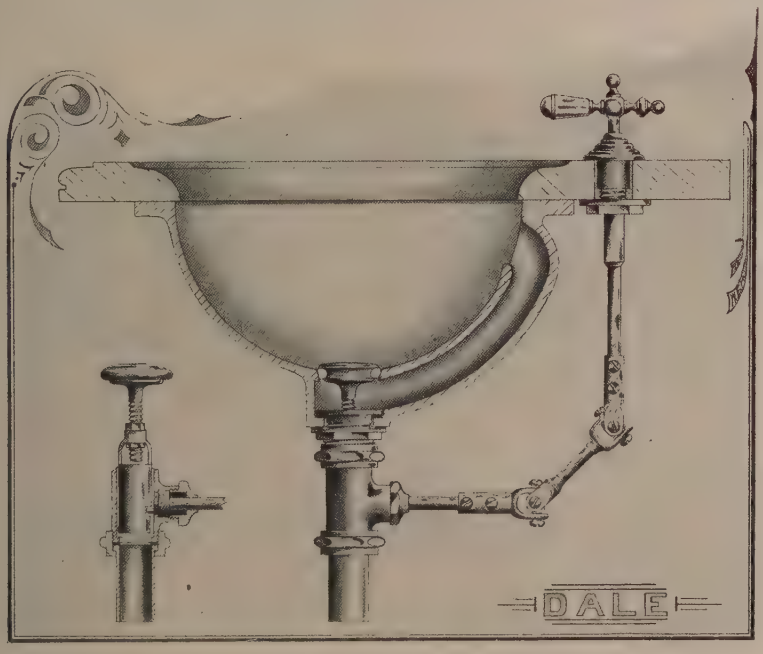


C. P. H. GILBERT, Architect, New York.

His announcements in the architectural journals and the magazines are always illustrated with houses on which his stains have actually been used, like the above, a method which attracts the eye and also gives practical proof of the favor which his goods enjoy among architects.

One of his recent advertisements is a collection of nearly 100 of these small cuts, with as many testimonials from all parts of the country, making a pamphlet that

THE "DALE" BASIN AND THE "DALE" BASIN WASTE (Patented.)



INCOMPARABLY THE BEST

FROM WHATEVER POINT YOU VIEW IT

WHY?

There is absolutely no fouling place that cannot be cleaned.

Cannot get out of order and is absolutely fool proof.

Misuse of fixture will not break it.

Makes a tight joint at outlet.

A HINT.

A FULL LINE OF FIXTURES CAN BE SEEN AT OUR EXHIBIT.

PAGE 76. PLATE No. A-99. CATALOGUE A.

THE HOFFMAN-HINSDALE COMPANY, 242 Water Street, New York.

can hardly fail to hold the attention of anyone who is interested in suburban architecture.

That his advertising is progressive is shown by his latest effort, which is the most elaborate of all. With a handsome country house by W. R. Emerson for an object, a device has been arranged by which sixty-four different combinations of Creosote-Stain colors can be seen, with as great accuracy as the best color lithography can accomplish, thus adding to its artistic qualities a real utility which will be found helpful to anyone who is working out color schemes. Both the above may be had for the asking.



CLIFF SAFETY AUTOMATIC REEL.

THIS illustration shows one of the Cliff Safety Automatic Fire Hose Reels being operated by a woman who never previously had attempted such a feat. The reel was equipped with fifty feet unlined linen hose, 2½". But eight seconds had elapsed from the time she commenced to unwind the hose to the time the above picture was taken. This positively proves that the Cliff Safety Automatic Reel is easier to operate and water supply more quickly obtained than with any other device. It is simple and strong in construction, ornamental and compact in design and nearly as cheap as the cheapest. Nothing ever made affords better protection against damage by fire. These reels, also Non-Automatic Swinging Racks and Reels of the best design and workmanship, are manufactured by The Cliff & Guilbert Co., 198 West Broadway, N. Y. City, who will be pleased to mail catalogue upon application.

"IRON CLAD" PORTLAND CEMENT.

THE Glens Falls Portland Cement Company is willing to guarantee all shipments of Iron-Clad Portland Cement as follows:—

1st. The cement will stand a minimum tensile strain of 600 pounds to the square inch section of neat briquettes, kept one day in air and six days in water.

2nd. The cement will stand a minimum tensile strain of 175 pounds per square inch section, three parts of sand and one part of cement, the briquettes kept one day in air and six days in water; standard crushed quartz used in testing.

3rd. The cement will stand what is known as the boiling test.

4th. 96 per cent. will pass through a No. 100 sieve.

Further information will be furnished by the Sole Selling Agent, the Commercial Wood & Cement Company, 156 Fifth Avenue, New York.

DIXON'S SILICA-GRAPHITE PAINT.

INTRODUCED 38 years ago by the Joseph Dixon Crucible Company, Jersey City, N. J., and titled by its manufacturers "the original graphite and best protective paint made." In its use for 38 years for the protection of steel viaducts, bridges, iron and tin roofs, corrugated iron work and steel smoke-stacks, it has demonstrated its economy in that it covers perfectly more surface to the gallon, gives a better appearance and protects from corrosion longer than the lead, metallic, asphaltum and composition paints. The Paint Department of the Joseph Dixon Crucible Company gives special attention to architects' specifications, and solicits inquiries on all points concerning protective paint for different classes of metal work.

LAWRENCE CEMENT COMPANY.

ARCHITECTS and engineers appreciate extra care taken by cement manufacturers in the preparation of their product for the market. Perhaps few mills have the perfect installation of modern machinery that The Lawrence Cement Company of Pennsylvania has introduced into its plant in the Lehigh Valley. Certainly no other cement company in the Keystone state employ more skilled and experienced workmen at the head of the various departments. Each step in the manufacture is most carefully studied and the composition frequently subjected every day to analytical and mechanical tests. The natural result of all this is a Portland Cement unexcelled by any of the best brands, and equalled by only a few.

The "Dragon" Portland is a striking illustration that cement making of the Twentieth Century is an exact science as practiced by The Lawrence Cement Company of Pennsylvania. The "Dragon" brand has a peerless record of over twelve years. It not only answers all the prescribed requirements of the American Society of Civil Engineers, but far exceeds in quality and tensile strength the most rigid restrictions of the latest specifications of competent builders.

MARSH METALLIC CORNER BEAD.

"THE luxuries of yesterday are necessities of to-day." Metal Corner Beads are no longer considered a luxury as practical experience and usage have proved their worth not only in protecting plastered corners but in forming grounds for plaster to work to, and when properly set giving straighter and better work. The "Marsh" presents many important features. It is a solid rod of steel thoroughly galvanized held rigidly in desired position by galvanized clips. It protects the corner in that it slightly rounds it, and



MAIN HALL, BROAD-EXCHANGE BUILDING, NEW YORK.
Clinton & Russell, Architects. George A. Fuller Co., Contractors.

INTERLOCKING RUBBER TILING

AS LAID BY US IN THE BROAD-EXCHANGE BUILDING, NEW YORK.

Noiseless, Non-Slippery, Restful to the Feet, Sanitary, Extraordinarily Durable. The Finest Floor for Use in Public Buildings, Banks, Offices, Theatres, Hospitals, Libraries, Kitchens, Laundries, Billiard-Rooms, Bath-Rooms, Stairways, Etc., Etc.

LAID DIRECTLY UPON EXISTING FLOOR.

NEW YORK BELTING & PACKING CO., Ltd.

NEW YORK, 25 Park Place. CHICAGO, 150 Lake Street. PHILADELPHIA, 724 Chestnut Street.
ST. LOUIS, 411 North 3rd Street. SAN FRANCISCO, 509-511 Market Street.
BALTIMORE, Baltimore Rubber Co., 101 Hopkins Place.
LONDON, ENGLAND, The B. & S. Folding Gate Co., 19 to 21 Tower St., Upper St. Martin's Lane, W. C.

the grooves on each side give a bond at every edge doing away with the feather edge which is easily clipped in all other devices. It accomplishes the object desired in that it protects the corner, takes paint readily, holds it, and does not rust. Manufactured and sold by F. G. Chase, 1 Madison Ave., New York.

ARCHITECTURAL TERRA COTTA.

THE White Brick & Terra Cotta Company, 156 Fifth Ave., New York, possesses the only mine of pure white clay in this section, which will not discolor, turn green or yellow after being burnt; it becomes harder than stone and withstands the elements. Having this superior white clay, they make superior grays, and limestone shades as well. It is not compelled to cheapen its terra cotta by using common clays for a body, and then slipping, painting or spraying the face with a white mineral paint, which lasts but for a season, frequently pealing or scaling, and leaving the building unsightly and cheap looking, offensive to the eye, and reflecting upon the owner, contractor and architect. In buying furniture we prefer *solid mahogany* to veneered. Then why select veneered terra cotta when solid colors can be obtained?

PLUMBING APPLIANCES.

NO EPOCH in the world's history bears record of such prolific proofs of man's genius as the closing years of the 19th century. The progress in art, literature, methods of travel and communication, mercantile and manufacturing interests bear witness to this fact. Modern architecture as demonstrated in the public and private buildings of our large cities is peculiarly suggestive of man's possibilities. The magnificent proportions of the palatial residence of the multimillionaire incite our admiration as manifestations of man's creation, but in no instance has the progress of evolution been so great as that evidenced by the interior furnishings of these dwellings. This is especially characteristic of the modern bath room. A few years ago this adjunct of the house was considered as a necessity only, and consequently relegated to some obscure corner. Being thus a secondary consideration, many times the space aside from that occupied by the fixtures was inadequate for comfort. The bath room to-day is considered as indispensable, and is in many cases a model of beauty and comfort. The demand for plumbing fixtures in staple goods and specialties has increased to such an enormous extent that a word or two descriptive of the source of these productions might interest the reader of this article. A number of manufacturers in order to meet competition have economized on the material entering into their products to the detriment of the consumer. A conspicuous example of rigid adherence to the principle: "The best is none too good," is shown by The Peck Brothers & Co., of New Haven, Ct., who have established a record for quality in the manufacture of highest grade of plumbing appliances. Having been established for nearly fifty years, the above firm is extensively known, although comparatively few have an adequate idea of its size. The floor space of the main factory aggregates about 120,000 square feet. The brass foundry attached is one of the largest in the country, while their pipe warehouse covers one-half an acre. This large plant is equipped with the most modern machinery and experienced workmen. A visit to their spacious and elegantly appointed show-rooms in New Haven, New York or Boston, will give one an idea of the importance attached to this class of goods. There you will find the well-known copper tub supplanted by the porcelain-lined and solid porcelain baths, and the shower, which has become an important factor in a well appointed bath-room, is shown in various forms. This bathing apparatus is perhaps the best example of the advance in plumbing appliances and is recommended by physicians as the most hygienic and healthful of modern baths. It is made in a variety of styles ranging from the simple shower to the large combination needle spray. They perform the combined offices of every other form of bath in use, and the exhilarating effect produced is extremely healthful. By communicating with The Peck Brothers & Co. you can obtain any desired information relative to plumbing appliances.

DYCKERHOFF PORTLAND CEMENT.

MR. E. THIELE, 99 John Street, New York, who for the past 22 years has represented the famous Dyckerhoff Portland Cement in this country, informs us that he will send to anyone interested in cement who will ask for it, a letter which deals with the importance of selecting a superior brand of Portland Cement for all work which is expected to be durable. The letter explains a defect frequently occurring in Portland Cement, which cannot be detected by architect or consumer or by the customary tests for strength, since the hardening of the mortar up to a certain age proceeds as usual, but which may after a shorter or longer period cause the loosening of the bond at first obtained and result finally in the total disintegration of the mortar or concrete in which such cements have been employed.

BALL BEARING HINGES.

ARCHITECTS visiting the Pan-American Exposition should not fail to see the exhibit of The Stanley Works, of New Britain, Conn., and 79 Chambers Street, New York City. They show a large number of Samples of their Ball Bearing Hinges in Wrought Steel and Wrought Bronze in a bewildering variety of beautiful finishes. Their exhibit is in the building devoted to Manufactures and Liberal Arts.

UNITED STATES CAPITOL.

SEVERAL very important contracts have been placed lately for the United States Capitol, one being that of a very fine bronze stairway, railings and elevator enclosures. The work has been done by famous people in this line, The W. S. Tyler Company, of Cleveland, Ohio, who certainly have done the Capitol credit with the very fine work which they have erected. The enclosures are finished in statuary bronze with finest chased work.

Walker & Chambers,

Engineers
...and
Contractors

..for..

Heating and Ventilating Apparatus.

50 East 20th St., NEW YORK.

The stairway is a remarkable piece of work and shows great skill in execution.

This company also erected fine bronze work in a large number of government buildings, and with skilled designers they are enabled to turn out some very beautiful designs.

RAPP'S CALAMEIN DOORS.

RAPP'S calamein door, electro-plated, is now the recognized standard with the building fraternity, and his force is working night and day to keep up with the orders in this department alone. Among recent contracts closed by this house are the following: Mt. Sinai Hospital, New York; Pratt Street Power House, Baltimore; Great Eastern Elevator, Buffalo; Baer Building, Reading; Stetson Hat Factory, Philadelphia; Jacob Tome Institute, Port Deposit; Boston Wharf Co.'s Warehouse, Boston; Browning King Building, New York.

SAFETY WINDOW APPLIANCES A NECESSITY.

THE demand for the modern lofty buildings makes it incumbent upon the architect to provide every possible means of safety against the new perils to life and limb. It is needless to say that window cleaning is a necessity, and the occupation of "window cleaner" the most hazardous about a building, and one from which serious and fatal accidents are daily occurring. Ample provision is made for protection against every other hazard. Why not the one that is most dangerous? It can be done by the use of the New Century Manufacturing Company's Revolving Window Appliance, which can be easily applied to the ordinary window and permits the entire window to be cleaned from the interior. Estimates will be furnished upon application, and working model shown.

JACOBSON & CO., 246 E. 44th ST., NEW YORK.

THIS firm is making steady progress as modelers, designers and makers of architectural and decorative ornaments, and are enjoying a very brisk trade. The catalogue, which was announced ready for distribution for April 1st, has been delayed on account of new and additional plates which they considered indispensable to a complete work; it will now positively be issued July 1st. All those desiring to avail themselves of the privilege of adding to their library a comprehensive and up-to-date catalogue should address the firm.

GRAND RAPIDS CARVED MOULDING COMPANY.

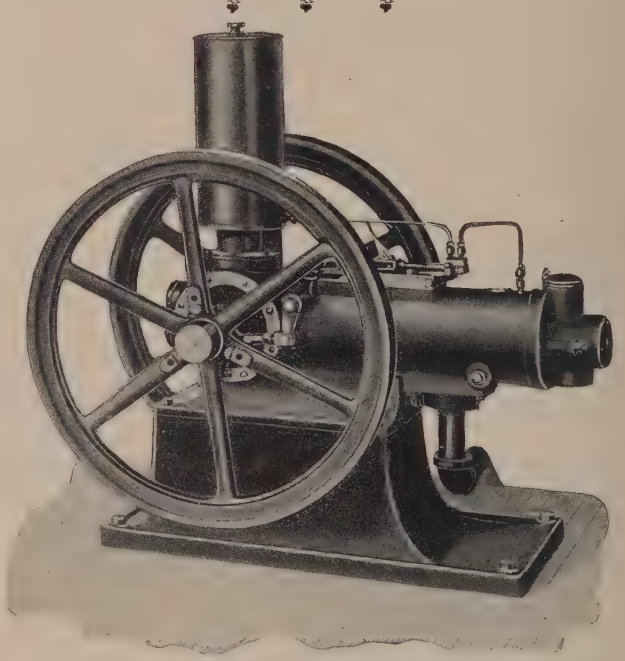
THE Grand Rapids Carved Moulding Company of Grand Rapids, Mich., make a specialty of the manufacture of innumerable designs of moulding for interior decoration. They are also making paneled ceilings and cornices which are coming into vogue in offices, lobbies and stores. They claim that all of their work is machine-carved and not pressed or mashed. The company has just issued a new catalogue for architects and builders.

HIGGINS' AMERICAN DRAWING INKS

ARE the Standard Liquid Drawing Inks of the World. They are used and endorsed by the leading Schools, Colleges and Institutes. Three-fourths of the professional draftsmen of this country use no other drawing ink.

The Waterproof Drawing Ink (white label) is insoluble when dry, and is best for working drawings which have to stand handling, moisture or color washes. The General Drawing Ink (red label) is soluble, and is best for India Ink tints and washes, for tracings, for patent offices and photo drawings, and all fine line work.

All colors can be used for lines or washes, and are waterproof when dry, but can be freely thinned with water to produce light tints or washes, and can be mixed with each other to produce various shades or tints, as the draftsmen may desire. They will be found much finer and smoother and more brilliant than the cake colors, and far more convenient to use.



THE MIETZ & WEISS KEROSENE ENGINE.

THE fact that kerosene is available everywhere at a low cost and has the necessary qualities of a good fuel with the highest thermodynamic value, has opened a large field of usefulness for the kerosene engine in isolated electric lighting plants and railroad pumping stations.

Catalogues and blue prints of this engine can be had by applying to August Mietz, 128-138 Mott Street, New York.

METAL BOOKSTACKS AND SHELVING FOR LIBRARIES.

ATTENTION of architects and librarians is called to the Green-Snead System of Metal Bookstacks and Shelving. It is the system installed in the Library of Congress at Washington, D. C., and many other important libraries in this and foreign countries.

HAVE YOU EVER SPECIFIED

MAGNITE AND PETROL COLD WATER PAINTS?

Last month we presented to you cuts of buildings in the vicinity of Boston that were finished with Magnite or Petrol. This month we take pleasure in presenting some representative buildings of Kansas City.



Post-Office. Swofford Building.
Bond Shoe Company's Building.
S. & S. Packing Company. The Cudahy Packing Company.

We should take pleasure in sending you our color card for your files, containing the thirty-six attractive colors of Magnite and Petrol. Also our book "Facts and Fac-Similes," showing pictures of other buildings where it has been used.

J. A. & W. BIRD & CO.,

43 India Street, **BOSTON, MASS.**

Absolutely adjustable and interchangeable shelves, minimum of loose parts, freedom from dust and vermin, maximum of light and ventilation, greatest storage capacity, etc., are a few of the advantages obtained by this system of Stacks and Shelving.

The Snead & Co. Iron Works, foot of Pine Street, Jersey City, N. J., are the sole manufacturers of this Bookstack and will mail illustrated descriptive catalogue on request. They also make a specialty of structural and ornamental iron and bronze work for buildings of all classes.

THE "TABOR" SASH.

DURING the past eighteen months the Tabor Sash Co. have installed over twenty-eight thousand sets of the "Tabor" Sash Fixtures. Not one has been removed and they have yet to receive their first complaint.

Among the contracts closed recently the New York representative reports the following: Y. M. C. A. Naval Branch, Brooklyn, Parish & Schroeder, architects; Connecticut Mutual Life Building, Hartford, Conn., Ernest Flagg, architect; shops for N. J. Central R. R., Elizabethport, Geo. Hill, architect; Lying-In Hospital, R. H. Robertson, architect (completed), and twenty New York city schools. The Tabor strip and hardware has been adopted by the Chicago School Board.

Mr. C. D. Tabor, Vice-President, has just returned from an extended trip east and west and has closed contracts for installing the Tabor window in a large Pittsburg office building, Alden & Harlow, architects, and in the Boston City stables.

It is a success! It is adapted to the ordinary frame. The sash slides, revolves or may be instantly removed without disturbing stops, cords or weights. It is weatherproof. The space between the edge of sash and pulley stile being entirely filled by the thicker edge of hanging strips. The space between the thin edge of hanging strip and pulley stile allows the strip to swing back with a hinge motion, unlocking the joint between the strip and the sash, when the sash may be adjusted to any desired position or turned entirely over for cleaning from the inside. The application of the Tabor system to top and bottom pivoted sash is entirely new, absolutely weatherproof, and allows the sash to be turned all the way round.

HOTEL AND APARTMENT HOUSE TELEPHONE SERVICE.

IN DEVELOPING the telephone service of New York, the New York Telephone Company has made many ingenious improvements over the original method of furnishing telephone service by means of a single line and a single telephone. One that is most peculiarly adapted to New York conditions is the private branch exchange system, introduced several years ago to provide a flexible means of handling the telephone traffic of a very busy office. Under this system the subscriber has on his premises a small switchboard to which extension telephones in his various departments are connected, and which, in turn, is connected by trunk lines to the nearest central office of the company. This system of telephone service is used by a great number of large business houses in New York, its flexibility, efficiency and smoothness of working having made it very popular. The same system is applied to large residential buildings, such as hotels and apartment houses, enabling telephone service to be supplied to every guest in a hotel, or to every tenant in an apartment house at very moderate cost. For hotel and apartment house use the New York Telephone Company has designed a very compact and attractive wall set of telephone instruments, which occupies a very small amount of space, and is positively ornamental in comparison with the cumbersome instruments in use up to a few years ago. All modern apartment houses with any pretentions to real comfort are equipped with private branch exchanges, so that every tenant may have the telephone service available. The New York Telephone Company in its announcements calls the special attention of architects to the desirability of designing the wiring of new buildings so that telephone service may readily be supplied to all occupants.

PARQUET FLOORS.

IN THE mind of the high-class architect the name of "G. W. Koch & Son" is held synonymous with "Parquet Floors." This firm has won an enviable reputation in their special line, and for exclusive designs and expert workmanship they have no equals.

The following is but a partial list of persons in whose residences they have laid floors: George J. Gould, Lakewood, N. J.; William C. Whitney, Fifth Avenue, New York; Andrew Carnegie, Fifth Avenue, New York; Cornelius Vanderbilt, Fifth Avenue, New York; P. D. Armour, Chicago. Estimates for high-grade work only are made by them. Showroom, 467 Fifth Avenue, New York.

J. B. & J. M. CORNELL.

FOR more than half a century this company has been recognized as one of the great factors in the iron industry of the United States. There is not, probably, a leading architect in this country who, at some time, has not come in contact with them in a business way, either as Manufacturers of Structural Steel, Ornamental or Architectural Iron Work or Cast and Wrought Steel, Bronze and Brass; but it will probably be news to architects in general that within the past three years they have added still another branch of metallic manufacture. Having their attention called to the possibilities of light sheet metal construction for the construction of fireproof devices for the preservation of official documents, books of record and general office uses, they determined in an experimental way to engage in its manufacture. The experiment proved a success. A great plant was built specially for the manufacture of Metallic Office, Vault and Bank Furniture, and to-day the business started as an experiment less than theee years ago has an annual output of nearly half a million dollars.

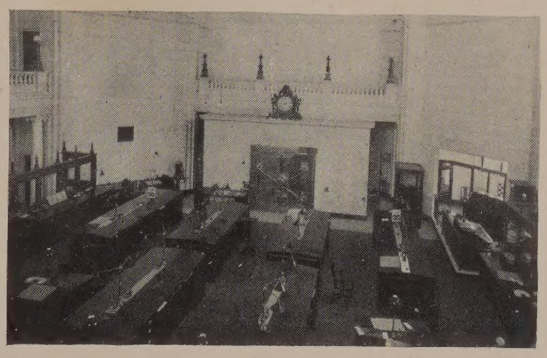
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Above view illustrates the interior of the Buffalo Savings Bank, Buffalo, N. Y., showing Metallic Desks and Counter, designed and built by J. B. & J. M. Cornell.

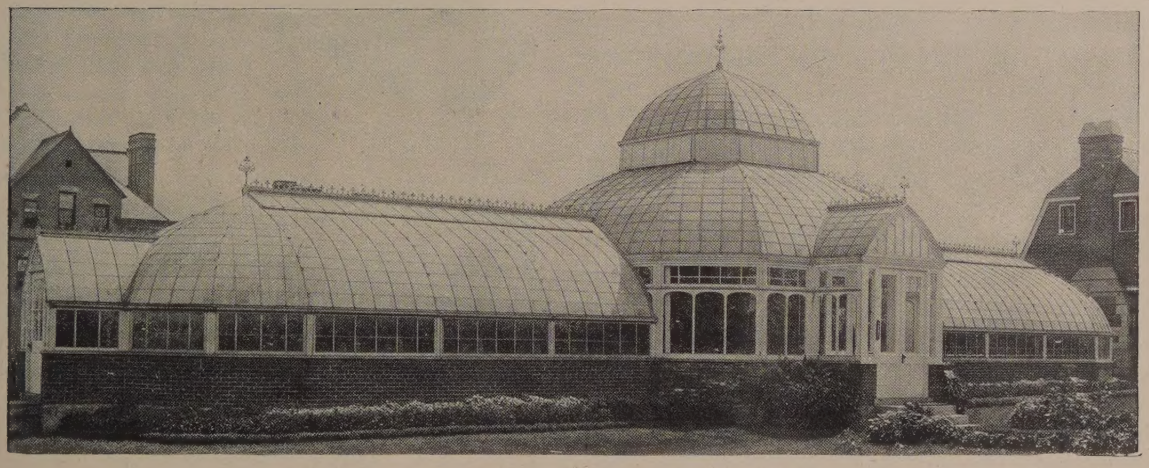
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A new feature that will recommend itself to architects is the manufacture of Metallic Shelving, Counters, etc., for store use. This is a long step in the direction of greater fire protection, economy of space, cleanliness and a reduction in insurance rates. Any one desiring further information should address the Company at 26th Street and 11th Avenue, New York.

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ARCHITECTURAL ORNAMENTS.

WELL worth a visit is the factory of the F. J. Newcomb Mfg. Co., as their business is largely on the increase. They have a number of modellers regularly employed and have accumulated a very large number of ornaments since the last issue of their catalogue. These are arranged in classified form, convenient for inspection, in a room set aside for that purpose. We noticed a number of very interesting Mantels and Mirror Frames in the Colonial and Adams style. Ornamental plaster work has also become an important feature of their business.

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PAINTS FOR STRUCTURAL STEEL.

STRUCTURAL steel is becoming every day of more importance in architectural work, and methods of preserving it from rust are consequently of great interest. The various materials offered for this purpose are well known, red lead, iron oxides, graphite and asphaltum leading in favor. Harry Smith, F. C. I., two years ago published in the *Journal of the Society of Chemical Industry*, (p. 1096, Dec. 30, '99,) the results of a series of exhaustive experiments on this question which will well repay reading by every architect interested in steel construction.

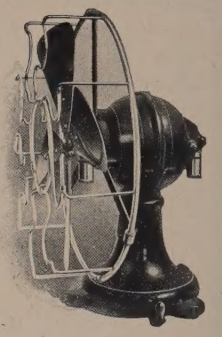
The resumé of his tests, which were very thorough and extended over a long period of time, is that while red lead, under certain conditions, affords the best protection, it is almost a practical impossibility to secure these conditions. They are that the pigments must be ground with oil by machinery and applied before the inevitable chemical action between the lead and the oil has proceeded very far. This means that the grinding must be done on the spot where the paint is to be used.

Of all other pigments he found that zinc white gave the best and longest protection, and recommends that, even where red lead is used for the under coat, zinc white or iron oxide paint be applied over it. He found zinc oxide, when used without other admixture than oil, "to have a very high protective value as a pigment for use on iron," while no other white pigment was found even moderately effective.

Since the other protective paints are all very dark, it is useful to know that tints can be made with zinc white without in the least impairing the protective value of any of them, while all of them under most circumstances have their value enhanced by the addition.

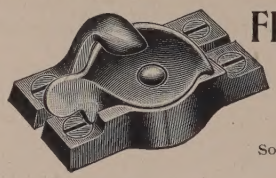
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